

PERCEPTIONS OF JUSTICE AMONG BRAZILIAN ADOLESCENTS:
THE RELATIONSHIPS WITH SCHOOL CLIMATE, PERCEPTIONS OF LEGAL
AUTHORITIES, AND STUDENT CONDUCT

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Chapter I: Introduction

The purpose of this study is to understand how Brazilian adolescents develop their perceptions of justice and the role these play in student conduct, perceptions of school climate, and legal authorities. As adolescents age, they are exposed to broader aspects of society and confronted with complex public issues. Adolescents' prefrontal cortex development drives their ability to think abstractly about the legitimacy of authorities and justice. Through personal and vicarious information and experiences, adolescents construct their assumptions about reality, which influence how they perceive and interact with authorities. This is a critical time to construct what they define as fair and should be understood within its context.

From a very young age, children have a conceptualization of justice (Piaget, 1936). Researchers from various countries have investigated this innate desire for fairness and its manifestations in multiple interacting contexts (Dalbert & Sallay, 2004; Dalbert, 2009; Hafer & Bèrgue, 2005). Piaget (1932/1997) closely tied perceptions of justice with a child's evolving cognitive development. Kohlberg elaborated upon Piaget's theory and explained that moral development cannot be judged by one's actions, but by the rationalization of the actions. Kohlberg called attention to how a child's moral development is socialized through rules and authorities (Kohlberg & Hersh, 1977). In this light, schools cannot be thought of as value-neutral institutions, but instead, are active socializing agents that shape students' conceptualizations of fairness and justice. The manner in which authorities justify and carry out discipline within the school environment acts as a 'hidden curriculum', guiding moral assumptions and values (Kohlberg & Hersh, 1977). Vygotsky's Socio-cultural theory emphasizes the influence that group values have in shaping individual assumptions. Vygotsky explained that interpersonal formulations lay the groundwork for intrapersonal development

(Vygotsky, 1978). Through this framework, children internalize consequences observed which shapes their understandings and expectations of justice, further developing their justice motive. The perspective of this research is that there is an underlying justice motive, which helps individuals interpret reality, feel secure, and establish a personal contract. This motive is molded both by age, and by multiple interacting environmental systems.

This study uses just world theory as a framework to study students' perceptions of justice. Belief in a just world (BJW) is the extent to which a person believes the world is fair. Current research suggests BJW has three main functions: (1) Establish a confidence that one will be treated fairly; (2) provide a conceptual framework to assimilate events and make attributions; (3) and institute a personal contract with society to uphold common values (Dalbert & Sallay, 2004; Peter, Dalbert, Kloeckner & Radant, 2012). BJW is a personal resource; it is a disposition that helps one cope with daily life events (Dalbert, 2007). It maintains some sense of justice despite adversity (McParland & Eccleston, 2013) and protects people from the constant fear of random injustice. BJW is divided into two constructs: the *Personal* BJW (belief that one's personal life is fair) and the *General* BJW (belief that society is fair).

Personal BJW is positively related to indices of healthy adaptive behaviors because it provides a confidence that one will be treated fairly and safe from random injustices (Dalbert, 2009). The higher people's Personal BJW, the more they will believe that their hard work will be compensated, which is a precondition for establishing long-term goals (Dalbert, 2004). It is a positive coping mechanism that enables a high internal locus of control and a sense of safety within familiar circles. Personal BJW is shaped earlier in development through the consistency and fairness of family climate and individual experiences (Dalbert & Radant, 2004). It tends to decrease in adolescence with the increasing sophistication of moral development, legitimacy of

authorities, and overcoming thoughts of personal infallibility (Dalbert & Dzuka, 2004; Piaget, 1932/1997).

General BJW incorporates one's assumptions about society and is not necessarily activated when individuals think about personal contexts. For example, one can hold on to the positive belief that they will be treated fairly, while still acknowledging that injustices exist in society. General BJW is connected to opinions of societal institutions (Correia & Vala, 2004) and is more predictive of harsh social attitudes, such as victim blaming (Dalbert, 2009).

Adolescence is a sensitive period for General BJW development with the ability to think abstractly and increased exposure to the broader society. Research suggests that in adolescence the General BJW and the Personal BJW become two separate constructs (Dalbert & Sallay, 2004). Adolescents are thinking about the fairness and legitimacy of the governmental systems and forming opinions by taking multiple perspectives. Personal BJW tends to be higher than General BJW (Adorić, 2004; Oppenheimer, 2006), but this may differ across educational levels (Dalbert, 2001) and socio-economic levels (Sutton & Winnard, 2007). Personal BJW and General BJW can predict different behaviors and conceptualizations of society and will be used in this study to understand the unique relationships formed between conceptualizations in the school and broader public institutions.

Perceptions of justice cannot be understood in isolation from context. To aid the understanding of the developing adolescent, the bio-ecological systems approach provides a systematic way to view the interactions between multiple nested factors of society (Bronfenbrenner, 1977). Under this framework, the school is a microsystem that has relationships with other systems (mesosystem) and is nested within the broader community (exosystem) and culture (macrosystem). The school is one of the first institutions to expose

individuals to the broader society. Therefore, assumptions created in schools regarding authorities are subject to generalizations across other public institutions (Gouveia-Pereia, Vala, Rubini & Palmonari, 2003). Research on European samples has suggested that when students perceive their school authorities as legitimate through positive relationships and perceptions of justice, they are likely to evaluate other types of authority as legitimate as well (Sanches & Gouveia-Pereira, 2010). The relationship established with authorities enables the transference of the school assumptions to the broader civil context, such as assumptions of legal, judicial and law enforcement authorities.

BJW is positively correlated with perceptions of teacher justice and legitimacy (Donat, Umlauf, Dalbert, & Kamble, 2012; Dalbert & Stöeber, 2005), and perceptions of school authorities are correlated with those of legal authorities (Gouveia-Pereia et al., 2003; Sanches & Gouveia-Pereira, 2010; Sanches, Gouveia-Pereira, & Carugati, 2012) in European samples. However, further research needs to bridge the gap between just world beliefs and the legitimacy granted to legal authorities (Dalbert, 2004; Sanches et al., 2012). Studying just world beliefs within the context of the education system is relatively new to the literature on BJW and, to this researcher's knowledge, prior to this study, no BJW research had been conducted within Brazil that acknowledges school variables.

Research has shown BJW to be influenced by cultural values (Correia, Kamble, & Dalbert, 2009; Furnham, 1985; Furnham & Rajamanickam, 1992; Furnham, 1993), yet little work has been done in Latin America, and to this researcher's knowledge, no research has been conducted with adolescents in Brazil concerning their just world beliefs. The socio-political climate of Brazil highlights the importance of empirical research focusing on the genesis of perceptions of legal authorities. Perceptions of corruption in Brazil lead to many unfavorable

views of legal authorities (Transparency International, 2013). Furthermore, research in Brazil has highlighted the unruly student conduct in schools and the malaise of teachers due to the dismal levels of teacher respect (Aquino, 2011). This study incorporated student conduct and perceptions of legal authorities in its design. This design was in line with current research on BJW, but it also reflected the state of Brazilian schools and addresses societal issues.

There are large gaps between Brazil's private and public education systems concerning academic performance (Oliveira, Belluzzo, Pazello, 2013), socioeconomic levels (Gamboa & Waltenberg, 2012), and levels of student conduct (Lopes, 2008). This study incorporated samples from private, public, and military schools into its design in order to explore the differences between student experiences and perceptions in different educational settings.

Brazil is a diverse culture formed from Asian and European immigration, and African slave trade. The unique combination of cultures incorporates aspects of individualistic as well as collectivist orientations (Hofstede, de Hilal, Malvezzi, Tanure, & Vinken, 2010; Tu, Lin, & Chang, 2011), which fosters a distinctive cultural setting to study. Brazil's large population and emerging economy make it an interesting location for further research. Current Brazilian adolescents will be the workers and voters who will form the global market and political system. Research should strive to understand the assumptions adolescents are forming about society and how these influence their perceptions of justice and student conduct. The purpose of this investigation is to analyze just world beliefs, fairness of school climate, student conduct, and perceptions of legal authorities, simultaneously in order to contribute to the understanding of adolescent development within the context of Brazilian schools.

Research Questions

How do Brazilian adolescents' perceptions of justice relate with their school conduct, perceptions of school climate, and legitimization of legal authorities?

What is the pattern of development of both General BJW and Personal BJW across school grade levels and family income levels?

Are there differences between students' perceptions of justice based on their ethnicity, school type, and family income?

Definition of terms

Justice motive: an individual motivation to strive for justice as an end in itself and may be largely intuitive or expressed sub-consciously (Dalbert, 2009)

Personal belief in a just world (Personal BJW): extent to which people believe their personal world is fair and they get what they deserve

General belief in a just world (General BJW): extent to which someone believes the world is fair in general, and people in general get what they deserve

School climate: extent to which someone perceives their school environment to be a fair place where teachers and staff treat students fairly and rules are implemented equally to all students.

Legal authorities: legal, judicial, and law enforcement officials.

Student conduct: the extent to which students perceive their compliance to and respect for school rules. This term is used in this study as an adequate translation of the Portuguese word 'indisciplina' (directly translated: lack of discipline). This term is readily used in Brazilian culture and literature to explain a cluster of micro-transgressions of school protocols which wear on the teacher-student relationships (Aquino, 2011).

Significance of the Study

Growing up in a time of economic growth, social stratification, and public corruption, Brazilian adolescents are constructing meaning through their personal and vicarious experiences. Through increased cognitive potential to think abstractly and greater exposure to society, they are shaping their views of authorities and fairness, which could influence their conduct and future expectations. This study sheds light on the associations students make between school authorities and outside authorities and how these relate to their student conduct and adolescents' developing perceptions of justice. This study directs scholarly attention to adolescents' perceptions of justice, taking into careful consideration the social background and developmental period.

Chapter II: Literature Review

This chapter provides an overview of the research on just world beliefs, its development across adolescence, its application to school climate, student conduct, and perceptions of fairness of legal authorities. The relationships among these constructs are discussed, and provide a theoretical foundation for the research design and data analysis. The last section of this chapter provides information on the Brazilian context and includes relevant information about its culture, history, and educational system.

Definition and History of Just World Beliefs

Beginning with Lerner and Simmons' seminal article in 1966 about people's reactions to innocent victims, just world theory sought to explain the human tendency to blame the victim and rationalize misfortune. Lerner and Simmons found that when participants were given the chance to compensate the victim they perceived the victim as innocent. However, when participants could not compensate, they perceived victims as partially to blame for the unfortunate outcome. Lerner and Simmons concluded that when people cannot restore justice tangibly, they restore justice psychologically by attributing blame. This phenomenon points to an underlying construct of fairness in the world. If one believes the world to be highly fair, an innocent victim violates that assumption, and the anomaly must be addressed to restore cognitive equilibrium. The belief in a just world (BJW) is a coping mechanism to diminish the threat of prevalent injustice in society. People are motivated to believe the world is a just place where people get what they deserve and determine their own fate (Lerner, 1980).

The first wave of research into this theory suggested that a strong BJW is an insensitive approach to victims and a 'fundamental delusion' of the human mind (Lerner, 1980). Since the first wave of research, just world theory has been broadened beyond victim derogation and seen

as evidence of an underlying justice motive (Hafer & Bègue, 2005). Various researchers have highlighted its role as a positive coping mechanism (Adorić, 2011; Furnham, 2005). BJW can be seen as a personal resource; it is a disposition that helps people cope with daily life events (Dalbert, 2007). It maintains some sense of justice despite adversity (McParland & Eccleston, 2013) and psychologically protects people from the constant fear of random injustice. These two waves of research have led to BJW being subdivided into two distinct constructs (General and Personal), which will be further addressed later in this chapter.

Justice Motive: Purpose and Theory

BJW is a reflection of an internal justice motive, an individual's motivation to strive for justice as an end in itself in personal behavior and assimilation of observed experiences (Dalbert, 2009). It is a disposition towards the world that may operate at an unconscious and intuitive level (Dalbert, 2009). BJW has three main functions: (a) establish a confidence that one will be treated fairly; (b) provide a framework to assimilate events and make attributions; (c) and institute a personal contract with society to uphold common values (Dalbert & Sallay, 2004; Peter et al., 2012).

First, BJW establishes a confidence in fair treatment. According to Maslow's hierarchy of needs (1943), humans' basic need for security is a fundamental assumption for well-being. This confidence serves as protection from the constant fear of injustice or tragedy and permits individuals to focus attention elsewhere. Secondly, BJW provides a framework to assimilate events and make attributions. Individuals interpret and construct meaning based on their judgments of what is fair. For example, a woman can find particular satisfaction in a job promotion if she believes she deserves it and the selection process was fair. Although the unfortunate outcome of victim derogation fits into this category, so do personal attributions of

effort, which are positive constructs. BJW is conceptually related to an internal locus of control (Kristjánsson, 2004) which provides people confidence that they control their fate. Within the school system, BJW helps students attribute their good grades to their hard work and assimilate negative consequences to negative behaviors. Assimilating personal experiences into a justice motive framework helps reduce uncertainty (Hafer & Bègue, 2005).

Lastly, BJW institutes a personal contract with society to uphold common values. BJW develops through interactions with society (Dalbert, 1999) and the realization that common rules must be established for the greater good and social order (Simmons, 1981). The personal contract to behave fairly in society is only valid to the extent that people perceive themselves to live in a just world. To maintain this commitment, people need to believe to some extent in a fair system (Hafer & Bègue, 2005). When children move away from gratifying immediate impulses, they commit to a personal contract by which they agree to act according to communal value standards with the “assumption that an appropriately more desirable outcome will accrue to them in the future” (Lerner, 1977, p. 135). For example, citizens understand they must respect and adhere to traffic lights in order for there to be justice and social order in the city. It is only fair for an individual to abide by the traffic lights if many others do so as well. If there is no perception of communal buy-in, the rules are irrelevant. Similarly, appropriate delayed gratification is only reasonable if people perceive themselves to live in a fair environment where rules are mutually accepted. Among older elementary school children, BJW is already significantly correlated with the ability to delay gratification (Braband & Lerner, 1974). This supports the connection between BJW and a personal contract, because it is only legitimate to delay gratification if the world is indeed fair (Maes and Kals, 2004) and reveals people’s understanding of their relationship with the broader society.

Distinction between General and Personal BJW

BJW can be seen as a double-edged sword. It is positively correlated with victim-blaming, but has strong predictive value for many positive psychological traits such as mental health (Adorić, 2011), hope for the future (Adorić, 2011; Dalbert, 1999; Dalbert, 2009; Hafer, 2000; Sutton & Winnard, 2007), and subjective well-being (Correia et al., 2009; Dalbert, 2002; Fox, Elder, Gater, & Johnson, 2010). Although some consider BJW a false belief, it is a strong predictor of happiness and success (Furnham, 2005), and is negatively related to depressive symptoms (Kamble & Dalbert, 2011). BJW is a necessary psychological construct, but also innately flawed because the world is not fair (Lerner & Lerner, 1981). To help explain these apparent contradictions, BJW is divided into two constructs: the *Personal* BJW (belief that one's personal life is fair) and the *General* BJW (belief that society is fair). In other words, people can acknowledge that injustices exist in society, while still holding to the belief that hard work is compensated and perceived threats of random injustice are reduced.

Personal BJW is the extent to which people believe their world is personally fair and they get what they deserve in their daily interactions (Dalbert, 2009). Having a high Personal BJW is protective against the pervading fear of random injustices, and is considered a positive coping mechanism that enables a high internal locus of control and a sense of safety within familiar circles (Dalbert, 2009). The higher people's Personal BJW, the more they will believe that their hard work will be compensated, which is a precondition for establishing long-term goals (Dalbert, 2004). Personal BJW is shaped earlier in development through the consistency and fairness of family climate and individual experiences (Dalbert & Radant, 2004). It tends to decrease in adolescence with the increasing sophistication of moral development, and understanding the fallibility of authorities (Dalbert & Dzuka, 2004).

General BJW is the extent to which people believe the world is fair. This incorporates assumptions about the broader society and is not necessarily activated in the personal realm. For example, people can hold on to the belief that they will be treated fairly, while still acknowledging that injustices are prevalent in society. General BJW is connected to people's opinions of societal institutions such as the health care system, major companies, and local and global political institutions (Correia & Vala, 2004). A high General BJW is also more predictive of harsh social attitudes, such as victim blaming (Dalbert, 2009), because it endorses the fairness of systems and others' experiences. When people believe the world is generally fair, yet cannot restore justice tangibly (by helping the victim or witnessing restoration), they tend to restore justice psychologically by blaming the victim in order to diminish cognitive dissonance with their BJW (Lerner & Simmons, 1966).

Claudia Dalbert was one of the first researchers to make this distinction between General BJW and Personal BJW. She wrote, "The personal belief in a just world is a better predictor of adaptive outcomes and the belief in a just world for others or in general is a better predictor of harsh social attitudes" (Dalbert, 2009, p. 79). Personal BJW is a strong predictor of well-being (Dalbert, 1999; Kamble & Dalbert, 2011; Dzuka & Dalbert, 2002), self-esteem (Correia & Dalbert, 2007), life satisfaction (Dzuka & Dalbert, 2007), and is considered to be an adaptive coping strategy (Vicente, 2010). Personal BJW is positively correlated with personality characteristics such as extraversion, and negatively correlated with neuroticism. In contrast, General BJW has shown no significant connection with personality development (Dalbert & Dzuka, 2004).

Researchers have conducted much work on Personal and General BJW to establish construct validity of these separate beliefs and have found them to be highly correlated, but they

perform different functions (Dalbert & Sallay, 2004; Dette, Stöeber, & Dalbert, 2004; Sallay, 2004). For example, both General and Personal BJW predicted how successful young adults believed they would be, but were predictive of different types of goals. The General BJW predicted *vocational goals*, while the Personal BJW predicted *social goals* (Dette et al., 2004). This could be because vocational goals are farther removed and dependent upon broader social domains, while social goals are more familiar and personal. These two beliefs have similar origins, but have distinct trajectories and purposes across human development

Development of BJW

Just world beliefs develop in early childhood (Furnham, 2005) and stem from a child's belief in immanent justice (Dalbert & Sallay, 2004; Piaget, 1932/1997). Piaget coined this term to explain a child's premature conceptualization of morality and fairness. It is the belief that justice comes swiftly and universally. Older children outgrow this belief as they learn to see things from others' perspectives (outgrowing egocentrism) and take multiple facets into account (outgrowing centration) (Piaget, 1936). The belief in immanent justice tends to decrease slowly as children's social world broadens and their cognition matures. A recent study conducting Piagetian interviews on children ages six to seventeen revealed that BJW was prevalent throughout the ages, but the reasons supporting it gradually shifted from immanent justice to personal merit (Barreiro, 2013). This shift from immanent justice to more sophisticated just world beliefs is influenced by socialization and cognitive maturation. As children mature and engage in increased peer contact, they have more opportunities to negotiate and articulate rules and fairness and collaborate with one another.

Theoretical and empirical evidence points to a general trend of cognitive development that moves from egocentrism to an acknowledgment of group rules and social reciprocity. This is

congruent with Damon's research that children progress from self-serving allocations of equality, to considerations of merit and deservingness, thus demonstrating increased cognitive sophistication (Damon, 1981). Childish beliefs of immanent justice gradually fade as their preoccupation with authorities diminishes and their desire for equality increases (Piaget, 1932/1997). Vygotsky's Socio-cultural theory accounts for this continuous flexibility in development. He emphasizes the influence group values have in shaping individual assumptions. Vygotsky explained that interpersonal formulations lay the groundwork for intrapersonal development and cognition theories must not be divorced from its cultural context (Vygotsky, 1978). In the same way, BJW cannot be understood in isolation of culture. The design of this study carefully incorporates important elements of the Brazilian culture in order to acknowledge the cultural context of Brazilian adolescents' BJW development.

Barbara Rogoff's work draws from Piaget and Vygotsky's theories to explain *guided participation*. Her model includes the importance of the social interaction with authorities and peers, as well as the importance of individual motivation and participation with the context (Rogoff, 1990). Adolescents are actively constructing meaning and making sense of fairness and injustice. They are doing this through interactions with authorities and peers, increased advances in cognition potential, and personal motivation to find meaning and cohesiveness in their opinions and perceptions of the world.

In adolescence, General BJW and Personal BJW become two separate constructs (Dalbert & Sallay, 2004; Dalbert, 2001). General BJW is more abstract in nature and develops in adolescence with the increase of abstract cognition, while the Personal BJW forms in childhood and is heavily dependent upon parenting style (Dalbert & Sallay, 2004). As adolescents age, they increase their understanding of the complexity of social interactions and begin to

contemplate the fairness and legitimacy of the governmental systems and form opinions by taking multiple perspectives. Their moral judgments of fairness become more sophisticated with a more abstract notion of justice, which can also make the interpretation of moral situations more ambiguous (Nucci & Turiel, 2009). Adolescents' increased ability to take others' perspectives influences their perceptions of justice because they can now interpret their own behavior from a spectator's perspective, judge an action from the recipient's perspective, and hypothesize about what they would do in another's situation (Karniol & Miller, 1981). As adolescents increase this cognitive ability, they have more capability to think critically and evaluate the legitimacy of authorities. Their respect for authorities becomes more situational and they are better able to articulate conditions where authorities are legitimate and illegitimate instead of bestowing legitimacy upon all adult authorities (Laupa & Turiel, 1986). This natural process of de-idealizing authorities reflects adolescents' increased ability to embrace a more complex view of people (Emler & Reicher, 2005). Younger children are more vulnerable to authorities, and have a greater need to see them as benevolent figures. As they grow older, they are less dependent and have a greater freedom to disagree and de-idealize authorities (Emler & Reicher, 2005). This freedom grants them the ability to think critically about the fairness of their world, rules, and authorities in various domains.

One of the clearest developmental trajectories in the literature of BJW development is the decrease that occurs in both General and Personal BJW across adolescence (Adorić, 2004; Barreiro, 2013; Dalbert, 2001; Dalbert & Dzuka, 2004; Dalbert & Sallay, 2004; Furnham & Rajamanickam, 1992; Maes & Schmitt, 2004; Oppenheimer, 2004; Oppenheimer, 2006; Peter & Dalbert, 2010; Sanches & Gouveia-Pereira, 2010; Schönplflug & Bilz, 2004). The research available on large developmental projections of BJW (both general and personal) suggests that

BJW is high in childhood, decreases in adolescence and young adulthood, and increases slightly in middle to late adulthood (Dalbert, 2001; Maes & Schmitt, 2004; Oppenheimer, 2004; Oppenheimer, 2006). These findings coincide with Nucci and Turiel's (2009) documented U shaped pattern in moral development. This temporary decrease in the trajectory is indicative of cognitive sophistication and ultimately assists in the developmental process because adolescents' increased social understanding allows them to incorporate situational information, leaving them more sensitive to morally gray areas. Children are more likely to center on a few pieces of relevant information, but adolescents can take multiple perspectives and understand situations in greater depth. As adolescents engage in more morally ambiguous thinking, they wrestle with injustices with greater depth and sophistication.

Adolescents' increased ability to think critically and abstractly leads them to push out from a unilateral relationship with authorities to an increase in equalitarian relationships. Piaget discussed the implication of this shift on moral development, and observed that, as submission to adult authority decreased, habits of reciprocity increased (Piaget, 1932/1997). Young children see their parents as absolute, omniscient authorities, but across time, they slowly abandon that belief. When adolescents understand authorities to be fallible, their BJW is threatened because rules and regulations may be faulty and unjust. At this point, adolescents may re-evaluate their BJW. This redefinition will in turn influence the bestowal of legitimacy granted to authorities. Fagan and Tyler's (2005) research on perceptions of authorities concluded that cynicism grows beginning at the age of twelve and bestowal of legitimacy declines sharply from age ten to age fourteen. Individuals' increased exposure to and experience in the world contributes to a decline in just world beliefs (Dalbert, 2004; Dalbert & Sallay, 2004). Piaget partially attributed the decline of immanent justice to seeing wickedness go unpunished and virtue unrewarded.

According to Piaget (1932/1997), the greater people's intellectual development, the more contradictions they will see of their expectations of justice.

General and Personal BJW decline across adolescence, but they decrease at different rates (Adorić, 2004; Adorić, 2011; Dalbert & Dzuka, 2004; Dalbert & Sallay, 2004; Schönplflug & Bilz, 2004). Personal BJW tends to be higher than General BJW across all ages, and the gap between them increases across time, with General BJW dropping lower than Personal BJW (Adorić, 2004; Oppenheimer, 2006). General BJW continues to decrease into the mid-twenties (Schönplflug & Bilz, 2004), while the decrease in Personal BJW levels off during mid-adolescence. General BJW begins to lose its importance around the age of twelve while Personal BJW only began decreasing after the age of sixteen (Oppenheimer, 2006). Personal and General BJW decline at different rates to help adolescents slowly adapt to the harsh understanding that the world is not consistently fair (Dalbert & Dzuka, 2004; Vicente, 2010). The General BJW's decrease does not pose as much of a threat as long as the Personal BJW is high. This enables the individual to preserve a sense of safety from the threat of random tragedies, and maintain an intrinsic motivation to fulfill their personal contract and sustain hope that their hard work will be compensated. During this time of increased cognitive sophistication, and decreased faith in the fairness of the world, it is vital that adolescents perceive a sense of fairness in their daily interactions with rules and authorities. The school plays an important role in developing adolescents' Personal and General BJW and managing the developmentally appropriate differentiation and decline.

As seen thus far, just world beliefs form in childhood, serve an adaptive function, and become more sophisticated during adolescence with the distinction between the General BJW and the Personal BJW. The purpose of this study is to understand the development of

adolescent's BJW and its interaction with the school, student conduct, and perceptions of justice of legal authorities. The following section will individually explore the literature on these three constructs as they relate to just world theory.

School Climate

Students' experiences of fairness within the school shape their BJW through interactions with non-familial authorities and other social agents. Although there are multiple facets of school climate, this study focuses on students' perceptions of the fairness within their school environment. Research within the school system shows a strong relationship between BJW and perceived school fairness both for General BJW (Kamble & Dalbert, 2011; Peter & Dalbert, 2010) and Personal BJW (Dalbert & Stöeber, 2005; Donat et al., 2012; Kamble & Dalbert, 2011; Peter & Dalbert, 2010). These justice perceptions help students attribute meaning to their experiences and interpret school experiences as fair or unfair. This section will explore how a strong just world beliefs can help students trust school authorities, enhance student well-being, and provide a sense of inclusion within the school environment.

Among secondary school students, Personal BJW is correlated with perceptions of grades as fair, and perception of teacher fairness (Correia & Dalbert, 2007; Dalbert & Stöeber, 2005; Peter, Kloechner, Dalbert & Radant, 2012) independent of their school track, gender and grade level (Dalbert & Stöeber, 2005). Perception of teacher justice has been found to mediate the association between Personal BJW and student achievement (Peter, Dalbert, Kloechner, & Radant, 2012). While most research is correlational in nature, Dalbert and Stöeber (2006) conducted a longitudinal study and revealed that evaluations of fairness of school climate improved grades over time. Conversely, grades did not influence their subsequent perception of justice in the school (Dalbert & Stöeber, 2006). This finding alone cannot dismiss the

reciprocity of the relationship between achievement and experience of school fairness, but it indicates BJW is foundational to adolescent well-being and adaptation, not simply a consequence of performance. A strong Personal BJW acts as a buffer, protects students from a consistent threat of injustice in school, and helps them adapt to their educational environment and trust their school authorities. Peter and Dalbert (2010) reported significant correlations between BJW (Personal and General) and a fair classroom climate. The more students experienced their personal and general world as just, and the more they experienced their teachers as just, the more positively they evaluated their classroom climate. In this reciprocal web, students' interpretation of the school climate affects their behavior, which induces reactions from the teachers, and further constructs school climate.

Research findings consistently indicate students' interactions with teachers and their perceptions of the school as fair are vital for daily life coping. Just world beliefs are inversely related to school distress (Correia & Dalbert, 2007; Dalbert & Stöeber, 2005; Dalbert & Maes, 2002; Kamble & Dalbert, 2011) even after controlling for grades, perceived fairness of grades, perceived teacher justice (Dalbert & Stöeber, 2005), and bullying behavior (Correia et al., 2009). The relationship between BJW and low school distress was seen for both Personal and General BJW, but stronger for Personal BJW (Kamble & Dalbert, 2011). This indicates that, although both BJWs are related to school variables, Personal BJW might have a stronger relationship to constructs that personally affect individuals, such as affect and student conduct. Students with a strong Personal BJW experience school as less stressful, and are better able to cope with school challenges (Dalbert & Sallay, 2004).

Perceived fairness of school climate is important not only because of its relationship with BJW as a positive coping mechanism, but also because it allows for greater group cohesion and

adherence to common rules. A common thread of these studies indicates perceived fairness of authority treatment is vital for the perception of social inclusion (Dalbert, 2004; Donat, et al, 2012; Emler & Reicher, 2005; Lind & Tyler, 1988). The perception of being treated fairly by authorities provides feedback of one's value to the group (Emler & Reicher, 2005; Lind & Tyler, 1988; Tyler, 1997), thus influencing their identification and social contract with the group (Tyler, 1997). Similarly, students who perceive fair treatment in school feel more included and are more motivated to behave fairly towards others in school (Donat et al., 2012). When students feel unfairly singled out, they will be less likely to buy-in to group rules because they do not feel adequately included (Emler & Reicher, 2005). This sense of exclusion can reinforce rule-violating behavior because students no longer feel an obligation to defer to group authorities and group rules. Over time, those who feel rejected by authorities will begin to reject authorities (Emler & Reicher, 2005).

Perceptions of teacher authority legitimacy are important predictors of rule-violating behaviors (Cohn, Trinkner, Rebellon, Van Gundy, & Cole, 2012). When students perceive fair treatment at school, they feel protected from a daily threat of injustice and establish a sense of security in the school environment. Conversely, when students view interactions with teachers and school administration as harsh or unfair, adolescents tend to delegitimize authorities. The perception of unfair treatment by authorities hinders adolescents' motivation to comply and places them at greater risk for dissatisfaction and maladjustment (Bègue & Muller, 2006; Fagan & Tyler, 2005). Perception of school climate may be an important mediator between Personal BJW and student conduct within the school. BJW and fairness of school rules point to the underlying expectations and beliefs students have about authorities and institutional rules and can provide greater insight into student conduct in adolescence.

Student Conduct and Student-Authority Relationships

One of the primary purposes of a strong BJW is the ability to establish a personal contract with society and within groups in order to adhere to collective rules. Understanding the connection between a personal contract and student conduct, Julio Groppa Aquino (1998) wrote about the *pedagogical contract*. This contract relates to the rules, hidden or explicit, of a classroom or school and students' buy-in to institutional rules. The pedagogical contract helps explain how BJW interacts with student conduct within the educational system. Students must perceive they are treated fairly in the school context in order to buy-in collectively to the school rules. Understanding the nature of the pedagogical contract could be at the heart of some student conduct problems in schools (Aquino, 1998). Although both Personal and General BJW relate to school climate variables, Personal BJW is more closely associated with adaptive outcomes and individual behaviors (Dalbert, 2009). This research design will focus more on Personal BJW when considering the relationship between BJW and student conduct. This section explains the connection between perceived fairness of an environment on student rule-abiding behavior and the current state of student conduct in Brazil.

Students who perceive their school authorities to be fair are less disruptive in class (Way, 2011) and less likely to engage in rule-violating behaviors (Cohn et al., 2012; Sanches et al., 2012). Perception of a fair school climate allows people to attribute legitimacy to authorities, reduces feelings of anger that lead to rule-violations, and strengthens ties with the rules (Piquero, Fagan, Mulvey, Steinbern, & Odgers, 2005). Aquino (1998) pointed out that the importance of perceived fair treatment indicates student conduct may be more reflective of school circumstances than individual characteristics of rule-violating students. The complexity of student conduct problems cannot be reduced to individual "problem" students, but must be seen

within the context of student beliefs about the fairness of the specific environment, and their beliefs about school rules and authorities. Emler and Reicher (2005) suggest one way to address the issue of adolescent non-compliant behavior is to investigate students' perceptions of fairness of teachers and institutional authorities.

School authorities aspire to impartiality and justice. However, it is difficult for educators and administrators to view discipline procedures objectively because they create and impose the rules. Kohlberg and Hersh (1977) pointed out that schools like to claim moral neutrality to avoid the controversy of moral education. However, it is impossible to be morally neutral while still disciplining and regulating group behavior. Any attempt to establish common rules is inherently a type of moral education. When schools attempt to maintain moral neutrality, they often resort to rule enforcement based on punishment and order (i.e. Preconventional moral reasoning) instead of emphasizing fundamental moral principles (i.e. Postconventional moral reasoning). Kohlberg and Hersh (1977) called this the schools' 'hidden curriculum'. Schools will inevitably be a stage for adolescents to practice their moral reasoning skills, even if covertly. Authorities' should be mindful of how adolescents interpret discipline procedures and the fairness of rule-enforcement because it is an inevitable component of school socialization. The relationships students form with school authorities shape the way students conceptualize justice and their motivation and reasoning for rule-abiding or rule-violating behaviors. These student-authority relationships are complex and must be analyzed within specific school and cultural settings

Student Conduct in Brazil

Two of the most prevalent concerns among Brazilian secondary education teachers are student behavior and lack of respect for school authorities (Aquino, 1998; Machado & Constantino, 2013). In Portuguese, disruptive behavior and lack of respect is referred to as

'indisciplina'. This term does not refer to a specific transgression, but a more subjective disposition of disrespect and non-compliance. Although it is not a direct translation, for the purpose of this research, the term *'indisciplina'* is translated as negative student conduct. Julio Groppa Aquino has conducted extensive work on student conduct in Brazil. He defined *indisciplina* as a cluster of micro-transgressions against school protocol and authorities, which erodes teacher-student relationships (Aquino, 2011). It is important to note that these transgressions are not typically violent acts or extreme transgressions. The vast majority of the occurrences refer to minor infractions such as disrespectful comments, parallel conversations, abstaining from constructive participation, and disruptive attitudes (Aquino, 2011; Lopes, 2008). Poor student conduct in Brazilian schools is not a new phenomenon, but more scholarly attention has been directed there in recent years because its intensity and visibility has increased (Caldeira, 2001; Lopes, 2008). The most common incidences of negative student conduct are not within the traditional definition of school violence, thus cannot be measured tangibly through questionnaires of physical aggression manifestations. Instead, the most common incidences of negative student conduct refer to relational aggression and disrespect between teachers and students.

In the past, research on student conduct in Brazil focused on the culpability of the student, instead of the school climate or student-authority relationships. This top-down approach fostered a one-dimensional perspective focused on blaming students for negative student conduct. This study does not advocate removing individual student responsibility. However, it does support the importance of understanding students' perceptions of the fairness of the system in order to understand students' motivations to either buy-in to the rules or engage in disruptive behaviors. When assessing student conduct, it is important to note that students are not only

agents in the *indiciplina* phenomenon, but they are also victims. Poor student conduct is related to higher incidences of student grade repetition, higher drop-out rates, and overall stress of the school environment (Lopes, 2008). Poor student conduct could be a symptom of deep student malaise and dissatisfaction with the current system.

Currently, more Brazilian researchers are investigating student conduct by focusing on student-authority relationships (Aquino, 1998; Caldeira, 2001). Administrators point to the breakdown of student-authority relationships as influential to the school climate and student conduct (Lopes, 2008). The school is an important socializing agent in society. However, if the relationships between students and school authorities are worsening, and positive rule-abiding habits are not established, the school is no longer as effective in its positive socializing role.

More research needs to view student conduct as a messenger of students' assumptions concerning rules and authorities, and investigate the underlying causes of these perceptions. These assumptions formed within the school system and stemming from BJW, not only have implications for student conduct, but can also shape the perception adolescents form of authorities in society.

Perceptions of Legal Authorities

The school is one of the first institutions to expose individuals to the broader society. Assumptions students create about school authorities may be generalized to other institutions (Gouveia-Pereira, Vala, Rubini, & Palmonari, 2003). Both General and Personal BJW are significant factors in perceiving justice within the school environment. However, some evidence suggests that General BJW is more closely related to perceptions of distant systems and authorities (Correia & Vala, 2004). Since most adolescents do not have direct experiences with legal authorities, the broad nature of General BJW may be more relevant in understanding how

students form their assumptions about the fairness of legal authorities. This section will focus on the relationship among General BJW, school climate, and perceptions of legal authorities across adolescence, and differences among ethnic groups.

When students do not believe their school rules are fair, they may build assumptions about society based on the injustices they perceive at school (Cohn, et al., 2012). For example, students who perceive their teachers as biased against them may be more likely to distrust police officers or judicial authorities because they assume those authorities will also treat them unfairly. Conversely, students who perceive their school authorities to be legitimate and just, are likely to evaluate other types of authorities as fair, such as the police, the courts, and the law (Sanches & Gouveia-Pereira, 2010). Past research has independently linked BJW to school climate (Dalbert, 2004), and perceptions of school climate to legal authorities (Sanches et al., 2012). However, research has not yet linked adolescents' BJW with their perceptions of legal authorities. This study will test school climate as a mediating variable between General BJW and perception of justice of legal authorities.

Perceptions of the fairness and legitimacy of public agencies are central dynamics to the adolescent legal socialization process (Cohn et al., 2012; Piquero, et al., 2005). Perceiving legal authorities as fair and unbiased allows people to attribute legitimacy to power (Fagan & Tyler, 2005; Piquero et al., 2005; Sanches et al., 2010) and is an important precondition for motivation to comply with collective rules (Correia & Vala, 2004; Dalbert & Sallay, 2004; Cohn et al., 2012). Authorities have the ability to incentivize rule-abiding behavior through rewards and deter rule-violations through punishments. Yet, it is difficult to sustain healthy authority relationships solely through rewards and punishments. Authorities need group members to defer voluntarily to rules and rule enforcers by acknowledging and granting legitimacy (Piquero et al.,

2005; Tyler, 1997). For this to happen, authorities must establish a trusting relationship where group members perceive authorities as fair and neutral. Adolescents' personal and vicarious perceptions of fair treatment by legal, judicial, and law enforcement authorities influences adolescent buy-in to societal rules and their interactions with authorities (Fagan & Tyler, 2005).

Similar to the developmental pattern of BJW, adolescents show a steeply declining view of legal authorities. As adolescents age, they are more likely to point out the fallibility of police officers and the inconsistent fairness of the law (Cohn, Bucolo, Rebellon & Gundy, 2010; Emler & Reicher, 2005; Fagan & Tyler, 2005; Sanches & Gouveia-Pereira, 2010). Although adolescents may not have much personal experience with legal authorities, they are witnessing their parents' interactions with authorities, interpreting media coverage, and being influenced by general public opinion. For example, students may perceive their parents to be helpless before the legal system, or hear news of political corruption in the justice system, or live in a neighborhood that views law enforcement officials as violent. All of these scenarios could foster a low or declining worldview of justice. This decline in perceptions of legal authorities interacts with adolescents' moral cognition and compliance with rules and authorities. Research strongly links adolescents' perceptions of the fairness and legitimacy of legal authorities to behavioral compliance to rules (Cohn et al., 2010; Cohn, et al., 2012; Emler & Reicher, 2005; Fagan & Tyler, 2005; Piquero et al., 2005).

Perceptions of fairness and legitimacy relate to compliance partially through the effects of group membership. Those who perceive authorities as fair, tend to see themselves as group-members, and are more likely to cooperate and buy-in to group behaviors through establishing a personal contract to follow group rules. On the other hand, those who perceive authorities as biased or unfair, tend to perceive themselves as excluded from the group and under-valued by

authorities, which helps justify rule-violating behavior (Emler & Reicher, 2005). Perception of group-membership has valuable application to the differences between majority and minority groups' relationships with legal authorities. Research in the United States has shown that ethnic minorities are less likely to perceive legal authorities to be fair and more likely to have a generally negative attitude compared to those of White-European descent (Estevez, Rachitskiy, & Rodrigues, 2013; Peffley & Herwitz, 2010; Piquero, et al., 2005; Tyler & Wakslak, 2004). In the United States, Blacks have a strikingly lower perception of the fairness of legal authorities compared to Whites, even after controlling for educational status and other social demographics (Peffley & Herwitz, 2010; Piquero et al., 2005). This perspective and expectation of fairness influences people's attribution of meaning to daily events and publically available facts. For example, if people assume public systems are fair, upon hearing about the racial imbalance in the penitentiary system, they may attribute the overrepresentation of minorities to other risk factors (such as socioeconomic status) or innate tendency towards violence. However, those who perceive the system as unfair may attribute the penitentiary imbalance to a systemic bias against minorities. Racial and economic demographics heavily influence the attributions adolescents make and influence the attributions they see modeled by adults in their community. Researchers must carefully investigate the development of BJW and perceptions of justice of legal authorities within the context of ethnic group membership and other demographics that may indicate societal privilege.

The first part of this chapter heavily focused on the development of BJW and its interaction with perceived fairness of school climate, student conduct, and perceptions of justice of legal authorities. The next part of this chapter will facilitate a contextual understanding of how these principles may interact within the Brazilian schools and society.

Brazilian Context

What is defined as fair and what is considered a violation of justice is subject to cultural, historical, educational, and economic circumstances. This section will explore specific components of the Brazilian society, and how these may interact with BJW development in this research design. The section will start out by explaining the economic distribution within the Brazilian society, and its possible relationship with BJW development. The section will then explain the context of Brazilian education and the differences between private and public schools, and will finish by explaining the history and current state of race relations in Brazil.

Brazil is a society of great social inequality. It has many poor and vulnerable groups, yet it is not a poor country. Compared internationally, Brazil has a medium per capita income and plenty of natural resources (Honorato da Silva & Sampaio, 2010). Over the past 10 years, Brazil has reduced its poverty and inequality rates, but unequal distribution of wealth is still a pervading social problem. Social scientists often juxtapose Brazil with China, India, and Russia due to its economic potential. However, according to the Gini index, a tool that measures economic distribution, Brazil's gap between the wealthy and the poor is greater than all three countries (OECD, 2010). This unequal distribution of resources could indicate that societal economic distribution may significantly influence BJW studies in Brazil. A meta-analysis of just world belief studies (mostly conducted within the USA) encompassed research between 1973 and 2006 and involved over 6000 participants. The study reported a progressive increase in just world beliefs and was significantly and positively correlated with economic inequality across the years (Malahy, Rubinlicht, & Kaiser, 2009). Similarly, cross-cultural studies point to a positive relationship between economic inequality and just world beliefs (Correia et al., 2009; Furnham, 1985; Furnham & Rajamanickam, 1992; Furnham, 1993). Researchers explain the link between

BJW and inequality is due to the belief that the fairness of a society helps legitimize current social status (Furnham, 1993; Malahy, Rubinlicht, & Kaiser, 2009). Therefore, as inequality rises, the dominant groups in society are prone to inflate their BJW in order to cope with the threat of existing injustices. While this is a tentative hypothesis, it does provide an important understanding of how endorsement of BJW can change across time dependent on the socioeconomic history of society. This positive relationship between BJW and inequality could be because BJW studies tend to assess privileged samples. These studies might have had different results if the demographics were more representative of other social classes.

Similarly, the tendency in the BJW literature of the Personal BJW to be higher than the General BJW (Correia & Dalbert, 2007; Dalbert, 1999; Fox, Elder, Gater & Johnson, 2010; Kamble & Dalbert, 2011; Sallay, 2004) may also be a reflection of the middle-class demographics typically assessed in research. One of the few studies to include lower SES young adults found no significant differences between Personal and General BJW (Sutton & Winnard, 2007). General BJW and Personal BJW still interacted as distinct constructs, but Personal BJW was not significantly higher than General BJW. Dalbert (2001) conducted a study across different academic tracks in the German high school system and reported differences of General and Personal BJW among the academic tracks. In the lower tracks, the difference between Personal and General BJW was less noticeable, while those in higher tracks had a higher Personal BJW and a lower General BJW across grade levels. Those in lower tracks still had a higher Personal BJW compared to their General BJW, but the gap was much smaller across adolescence. Dalbert hypothesized that the differences across the tracks was due to an intellectual disparity; those in higher tracks had more sophisticated abstract thinking capabilities than those in lower tracks. However, it also could be that, due to inequalities in the system, those

in higher tracks experienced systematically more fairness than those in lower tracks and their personal lives were, in fact, more fair than those in the lower tracks. Similar differences may be observed between the public and private education in the Brazil. This research design will include adolescents from different socio-economic statuses and different educational backgrounds in order to help tease out the development of BJW in diverse demographic sectors. The next section will explain many social and cultural aspects of the Brazilian education system. These differences may shed light on the unique factors that influence Brazilian adolescents' perceptions of justice within the school system.

Brazilian education system

One of Latin America's greatest challenges is improving education quality (World Bank, 2013). Among the 57 countries that participated in the 2006 Program for International Student Assessment (PISA), all Latin American countries were in the bottom quarter of the distribution (Gamboa & Waltenberg, 2012). According to the World Bank (2007), only 30.6% of the Brazilian population has completed secondary education and only 9.3% have a tertiary education. The most recent PISA revealed that, among 65 participating countries, Brazilian schools ranked between 55 and 60 in math, reading, and science (PISA, 2012). This is striking, considering Brazil ranks seventh among 192 countries in GDP (World Bank, 2013).

In the last 50 years, Brazil has improved public access to primary education. Prior to 1970, government schools were available to a select few (Aquino, 1998). In 1971, the government made education compulsory from primary to eighth grade. This law dramatically increased the number of students in the schools and the number of teachers hired. The increased democratization of education has continued to improve. Over the past decade, Brazil has increased the enrollment of primary and secondary education by 18%, including more students

from socio-economically disadvantaged backgrounds and from rural areas (PISA, 2012). The dramatic influx of students in public schools consequentially lowered the standards and salaries of teachers.

High school students and teachers express frustration with the education system and attribute it to government neglect (Leão, Dayrell, & dos Reis, 2011; Machado & Constantino, 2013). Teachers within the public school system frequently use union strikes to capture government and community attention (Ruiz, 2013). The strikes are manifestations of the power struggle between schools and the government, and leave students caught in the middle and suffering from frequent pauses in education (Castro, 1998). In March of 2014, 70% of the public schools in a state capital in Southern Brazil went on strike. This manifestation temporarily closed 131 public schools and 26 other schools only offered partial services (Globo, 2014, March 17). The following month, public school educators across the same state paralyzed 70% of the schools and flooded the streets advocating for higher salaries and better working conditions. A qualitative analysis of secondary students found that many adolescents perceived public high school teachers to be unmotivated and frequently skip class (Leão et al., 2011). Students report low teacher motivation after teachers return from strikes, and claimed it negatively affected their academic performance (Leão et al., 2011). Strikes, poor working conditions, and a lack of motivation takes a toll on the overall climate of public schools (Castro, 1998) and may worsen relationships between students and teachers (Leão et al., 2011). The discrepancies between private and public education may be fundamental to understanding how adolescents form BJW and how these beliefs influence their perceptions of school climate, legal authorities, and student conduct. The next section will explain the differences between public and private schools in Brazil.

Public and private schools in the Brazilian education system. There are large gaps between Brazil's private and public education systems concerning socioeconomic levels (Gamboa & Waltenberg, 2012), academic performance (Oliveira et al., 2013), social mobility (Gamboa & Waltenberg, 2012; Honorato da Silva & Sampaio, 2010), and levels of student conduct (Lopes, 2008).

The divide between private and public schools sustains the income disparity cycle because students who come from lower income situations tend to attend public schools (Gamboa & Waltenberg, 2012; Honorato da Silva & Sampaio, 2010). In the Southern region of Brazil, the average per capita income of households in public schools is \$262.00; but in private schools, it is \$876.00 (Oliveira et al., 2013). The same national data set reported that, among public school students, 11.8% of fathers and mothers had less than four years of primary school while in private schools it was less than 1.7%. A qualitative study among high school students reported that students were intensely aware of this educational disparity and described it as "a poor education for the poor" (Leão et al., 2011). The gap between public and private is readily seen in the academic quality and performance among students (Oliveira et al., 2013; PISA, 2014).

Students in public schools tend to perform consistently lower compared to those in private schools. In the 2009 PISA data, public students averaged 373-398 in the areas of math, science, and reading, while students from private schools averaged 485-516 in the three subject areas (Gamboa & Waltenberg, 2012). To put these numbers in context, the average score among the OECD (Organization for Economic Cooperation and Development) countries is 500 points and the standard deviation is 100 points. Students in private schools performed comparably to the average of the OECD countries, while those in public schools performed on average 111 points lower, making the gap the largest divide among Latin American countries (Gamboa &

Waltenberg, 2012). According to a national Brazilian standardized test, students in the Southern region (where data was collected) had the highest averages across public schools among the five Brazilian regions. However, the average score of public schools ($M=256$; $SD=45$) was still much lower than the private schools in the region ($M=312$; $SD=49$) (Oliveira, et al., 2013). The private school advantage pattern was also found when researchers compared neuropsychological performance between the two school types. Adolescents from private schools significantly outperformed public school students in tasks of memory, writing, sustained attention, and constructional and reflective abilities even after controlling for SES and age (Casarin, et al., 2012).

Gamboa and Waltenberg (2012) argue that some inequalities are tolerable such as those related to personal effort, but others are unacceptable such as those related to socially inherited circumstances. Using the PISA data, they separately analyzed both types of inequalities and, among Latin American countries, Brazil was ranked the most unfair nation in education-related variables and equality of educational opportunity. The researchers found that school type accounted for nearly 20% of all the unfair inequalities. The low quality of Brazilian public schools cripples the potential for future students to break the cycle of inequality (Honorato da Silva & Sampaio, 2010). Education is one of the main determinants of social mobility because it grants better opportunities in the labor market (Honorato da Silva & Sampaio, 2010), but when a child's education is so closely tied to the parents' education and social status, it challenges the fairness of the playing field.

In addition, some research highlights the behavioral differences between public and private school students. Public schools report higher incidences of disruptive behavior (Lopes, 2008). As mentioned earlier, many public school students perceived their teachers to be

unmotivated and perceive the government to lack interest in their education. These factors may contribute to poor student conduct and disrespect for authorities.

Frequent teacher strikes, low quality of education, and poor governmental support, influence the public school students' perception of school climate. Economic inequality in Brazil partially explains the differences in educational inequality but cannot fully explain racial inequalities within the Brazilian society. The following section will provide a historical overview of race relations in Brazil and provide contextual understanding of how racial background may interact with other variables in this study.

Race relations in Brazil

Brazil is a diverse nation formed through European and Asian immigration, African slave trade, and a small percentage of surviving Indigenous tribes. Similar to the USA, European colonists facilitated the slave trade, which supported Brazil's sugarcane production from the sixteenth through nineteenth century. The abolition of slavery in 1888 led to the arrival of millions of European and Asian immigrants to fill the labor gap and populate the land (Marcus, 2013). Many Italians, Germans Spaniards, Russians, Polish, Lebanese, Syrians, Turks, and Japanese came to Brazil (Marcus, 2013). High rates of interracial relationships fostered much miscegenation throughout Brazil's history (Telles, 2004). The diversity represented in Brazil makes it one of the most genetically heterogeneous populations in the world (Marcus, 2013), but the proportions fluctuate by geographical region. Historically, the African influence on Brazilian culture is originally from North-Eastern Brazil, where sugar-cane production spearheaded the economy and housed the capital of Brazil until 1763. Southeastern and Southern Brazil received the majority of the influx of European immigrants due to the relocation of the capital, the agricultural shift from sugarcane to coffee, and industrial growth in the Southeast. According to

the national census, 67.7% of Brazilians over the age of 15 self-identified as White, but in the Southern regions it is higher (70-86%) and in the Northern regions it is lower (24-42%) (Brazilian Institute of Geography and Statistics, IBGE, 2008). This study takes place in Southern Brazil and, due to the vast regional differences, will not be representative of the entire country. The results from this study must be understood within the racial context of Southern Brazil.

In the 1930s, Brazilian social scientist Gilberto Freyre, boldly wrote about the beauty of the miscegenation of multiple races in Brazil. He claimed that a new and vibrant race would immerge and upheld Brazil as a racial democracy (Freyre, 1933; Bailey, 2009). Freyre's work internationally spread the notion that Brazil was a homogeneous country with much miscegenation and little segregation or racism. This understanding of Brazil as a racial democracy took root for several decades and there is evidence to suggest that many Brazilians currently hold this view (Bailey, 2009). However, during the past 30-40 years, sociologists and demographers have called attention to the social inequality across the spectrum of skin tones and have disputed the classification of Brazil as a racial democracy (Bailey, 2009; Telles, 2004). Current researchers claim that this myth demobilized potential movements against racism by convincing people of equality (Bailey, 2009; Telles, 2004). The myth may also be responsible for differences in people's perceptions of justice. Adolescents' assumptions of the racial democracy or racial inequality will influence their perceptions of justice in the school, and in legal authorities.

Although the myth of racial democracy is blamed for fostering complacency, it must be appreciated in historical context. Freyre's writings stood in stark contrast to the apartheid laws in South Africa and the Jim Crow laws in the USA. The comparatively positive interracial relations shaped public speech around the *Aquarela do Brasil* (Brazilian watercolors), which

proudly proclaimed Brazil as a representation of the whole color pallet with every shade and ethnic combination (Marcus, 2013). National miscegenation fosters difficulties labeling racial categories and counting members across distinct groups. Different from the United States' focus on racial ancestry, Brazil tends to use color categories and focus on skin tone phenotype (Gonzalez, 2008; Marcus, 2013). The Brazilian census asks citizens to self-identify their color/race by picking one of five categories: *Branco* ("white"), *Preto* ("black"), and *Amarelo* ("yellow"), *Pardo* (mixed/brown) and Indigenous (IBGE, 2008). The need for fixed categories for the census stems from the complexity of self-classification. A national survey in 1979 used an open-format to assess race in an attempt to give all citizens the right to self-label. The result was 134 different terms to describe color (Bailey, 2009). The flexible nature of Brazilian race definitions makes it challenging to classify objectively any population sample.

Brazil's emphasis on color phenotype can be easily lost in translation (Gonzalez, 2008; Marcus, 2013). *Branco* does not directly translate to what most Americans would define as "White". In Brazil, almost half of mixed-race samples opt to self-identify as *Branco* when given a dichotomous option to pick either *Branco* or *Preto* (Bailey, 2009). This is because of the focus on color, not racial ancestry, but also could be because some would rather self-identify as *Branco* to avoid a negative social stigma (Marcus, 2013). Compared to the USA's understanding of race, the self-identified "White" population in Brazil is probably inflated and the "Black" population is probably deflated compared to how Americans categorize race (Marcus, 2013).

Ethnic background and social inequality are confounded in Brazil and it is impossible to separate racial discrimination from economic discrimination and educational inequality (Bailey, 2009; Gonzalez, 2008; Telles, 2004). Brazilians with lighter skin have a disproportionate share of wealth and power and the less affluent are likely to be on the darker side of the skin-tone

spectrum (Marcus, 2013; Telles, 2004). *Preto*s in Brazil have less access to organ transplants, have six years less of life expectancy, and overall have three times higher poverty rates compared to *Branco*s (Marcus, 2013). Nationally, the monthly income of self-identified *Branco*s is R\$1,663.9 (roughly \$686.00 USD), but for those who identify as *Preto* or *Pardo*, the average monthly income is only R\$847.70 (\$350.00 USD) (IBGE, 2009). On average, *Branco*s complete 9.1 years of schooling, while self-identified *Preto*s or *Pardo*s complete only 7.6 years. The discrepancy is not only in amount, but also in age-appropriate schooling. In the Southern region, about 59% of *Branco* adolescents between 15-7 years are in age-appropriate schooling, compared to 42% that self-identify as *Preto* or *Pardo* (IBGE, 2012). Thirty-five percent of adults that self-identify as *Preto* or *Pardo* have college degrees while 65% of *Branco*s have college degrees. This is largely because the entrance into college is indicative of the quality and type (public/private) of education received earlier in life. Telles (2004) explains that non-*Branco* Brazilians hit a “discriminatory glass ceiling” which is linked to the unequal nature of public and private education. The unequal access to resources puts many Brazilian citizens in immobile situations regardless of personal effort or abilities. Lerner (1980) first described BJW as the belief that the world is a just place where people get what they deserve and determine their own fate. Being the victim of discrimination and systemic immobility will no doubt influence adolescents’ perception of justice in their worlds. These deep social and economic inequalities make it vital to include ethnic background in any research concerning perceptions of justice. Brazilian adolescents are grappling with inequalities in education, race, and economic status and their inclusion in different groups may influence their Personal and General BJW.

Color/Race has a complex relationship with school type and economic status and cannot be seen as an isolated facet of society. The interaction between this race and other demographic

variables will be an important part of this research design and may shed light on the social complexity of justice perceptions. These interactions may play an important role in shaping adolescents' views of fairness within the school system and justice within the broader society.

Conclusion

This literature review can be understood within the framework of Bronfenbrenner's bio-ecological theory (1977). Bronfenbrenner's theory outlines five nested sub-systems that interact with each other and contribute meaningfully to development: microsystem, mesosystem, exosystem, macrosystem, and chronosystem. From the literature review, it is possible to understand the school as a microsystem of development of just world beliefs. School climate and student conduct are within this microsystem. Students' perceptions of school climate influence their acceptance of school rules and student conduct. The literature supports the possibility of understanding school climate as a mediating variable between Personal BJW and student conduct.

The microsystem of the school is embedded within the exosystem, the broader community. The assumptions formed about school authorities may have implications for authorities in their exosystem, such as law enforcement officials. During adolescence, students are developing their General BJW, judging the fairness of their school climate, and constructing their opinions about legal authorities. These constructs mutually influence each other and will be analyzed in this study. The exosystem is under the umbrella of the macrosystem, where important cultural factors must be considered. This chapter reviewed Brazil's economic inequality, the national education system, and racial relations. These are relevant demographic variables that have deep cultural and systemic roots. The differences and interactions between these will be assessed to understand adolescents' perceptions of justice.

Finally, the chronosystem permeates all of Bronfenbrenner's systems and refers to historical development of a society as well as the developmental changes of an individual. The purpose of this study is to understand the many facets of justice perceptions (Personal BJW, General BJW, school climate, and legal authorities) within the context of a developing adolescent. Secondary school students are rapidly developing their abilities to think abstractly and idealistically which influences their relationship with and expectations of authorities. In addition, adolescence is a period where students are increasingly making decisions based on perceived legitimacy of authorities, and are reflecting on the justice of their world. This study draws from Bronfenbrenner's theory in order to acknowledge the complexity of adolescent development and measure perceptions of justice by looking for interactions in nested contexts.

Chapter III: Methodology

This study seeks to understand how Brazilian adolescents develop their just world beliefs and the role these play in student conduct, perceptions of school climate, and legitimization of legal authorities. Through a partnership with the Faculdade Evangélica do Paraná (FEPAR), a private university focused on the health sciences, this project collected quantitative data from one public school, one private school, and one military school located in a state capital in southern Brazil. The primary researcher took the necessary procedures to become a registered researcher with the Brazilian government, and was officially affiliated with FEPAR to conduct research, as it is a requirement to have a national Institutional Review Board (IRB) approval. FEPAR and BSU both independently granted IRB approval of this study.

Instrumentation Procedures

Translation

All of the scales used in this study were published in the English language. For the purpose of this study they were translated into Portuguese by a native Portuguese speaker and then two Brazilian psychologists back-translated the items for authenticity. In addition, two Brazilian teachers analyzed and critiqued the instruments to ensure that all items were at students' reading levels. The explanation of each specific scale will provide additional information about the translation process.

Pilot study

A pilot study was conducted with 47 students at a public school in southern Brazil. Under the supervision of Patricia Napolitano, psychologist and professor at FEPAR, two psychology interns with training in survey administration distributed the anonymous questionnaires to students. A total of 47 students, 25 in ninth grade and 22 in 11th grade

completed the survey during class time upon approval from the school principal. Students in the ninth grade classrooms took approximately 20 minutes to complete the survey and students in 11th grade took approximately 10-15 minutes to complete the survey. Participants were between the ages of 13 and 18, 57.4% were male. Consistent with the national census of the Southern region of Brazil, 74.5% of students in the pilot study self-identified as White. After students completed the survey, the interns asked students to provide them with feedback on the questionnaire and ask any clarifying questions concerning any items. This feedback is included under each specific scale subheading.

Instruments

Demographics. The questionnaire is anonymous, but students were asked to report their sex, race, family income, age, school, and grade level in school. All of these, with the exception of age, were presented as categorical variables and students choose a pre-existing option.

Family income was measured according to the number of minimum wages the family brings in every month. This is a customary way to calculate family economic status in Brazil, and students selected among three income brackets on the survey (“1-3 minimum wages”, “4 to 6”, or “7 or more”). Students in the pilot study did not raise any questions about this item.

Race was measured based on students’ self-identification of the same categories used in the Brazilian census. One student during the application process expressed difficulty filling out this item. As expressed in the literature review, there is little consensus over the best ways to categorize race and ethnicity in Brazil. The categories used in the census are the most well known and common across social science research, and were advised by FEPAR as the best alternative in quantitative research.

Belief in a just world (BJW). BJW was measured through Dalbert's (1999) Personal BJW (e.g. "Overall, events in my life are just") and General BJW questionnaire (e.g. "I think basically the world is a just place"). Dalbert's scales are the most frequently used BJW questionnaires in education, particularly secondary education. Dalbert's General BJW had been previously validated in Brazil by Carlos Eduardo Pimentel (2010) for a university sample. All items maintained their original meaning after back-translation. Upon suggestion from a Brazilian teacher during the translation process, two Portuguese words were simplified from Pimentel's version to be suitable for a secondary education sample. In the third item, the word for "get" (*obtenho*) was simplified to a more common word (*tenho*). In the fourth item, the word "overall" (*sobretudo*) was substituted for a synonym (*de forma geral*). The pilot study revealed good reliability estimate for both the Personal BJW ($\alpha = .75$) and General BJW ($\alpha = .68$) scales. These items are assessed on a six point Likert scale ranging from 1 = Completely disagree to 6 = Completely agree.

School climate. To measure school climate five items from the Delaware School Climate (Bear, Gaskings, Blank & Chen 2011) (e.g. "The rules in this school are fair") and two items from the shortened version of the California School Climate and Safety Survey (Furlong et al., 2005) (e.g. "It pays to follow the rules at my school") were used. Many studies with high school students have used both instruments (Bear, Yang, Pell & Gaskins, 2014; Gendron, Williams, & Guerra, 2011; Yang et al., 2013). Items were chosen based on the Cronbach's alpha of the scale and their conceptual relationship with fairness in school. Two of the items from the Delaware School climate survey were modified slightly to better fit the Brazilian society. The original items read "of all *cultures and races*" and the modified version read "of all *races and social classes*" due to the literature regarding the relevancy of social class in Brazil. After back-

translation, all of the items maintained their original meaning, and most back-translated items (86%) were identical to the original items. A reliability analysis with the pilot study sample estimated good reliability ($\alpha = .71$). Students from the pilot study had no questions or comments on these items. Items are assessed on a six point Likert scale ranging from 1 = Completely disagree to 6 = Completely agree.

Perceptions of legal authorities. This concept was measured through a compilation of items from scales of evaluation of authorities constructed based on Emler and Reicher (1987), Rubini and Palmonari (1995), and Tyler (1990, 1997). These items were first used together by Gouveia-Pereira and colleagues (2003) to evaluate the perceptions students have about public authorities including the police, the legal system and the judicial system (e.g. “In general, the decisions of the courts/judges are fair”). Items were chosen that were considered applicable to a Brazilian society. After back-translation, all of the items maintained their original meaning. However, two items were modified upon the suggestion of Brazilian educators. The item “Judges are more protective of the better off” was modified to “Judges are more protective of the better off than they are of the poor” because of the confusion in wording a comparison phrase without a comparison object (“the poor”). The original item “The police spend more time protecting the rich than helping *normal people*” was re-worded to say “The police spend more time protecting the rich than helping people *of other social classes* (medium and poor)” because of the possible confusion over the term “normal people.”

After the pilot study, two items were removed from this scale: “People who refuse to comply with the law are a threat to society”, and “Laws are made in order to make society a better place for everyone.” These items were removed because their inclusion yielded a low reliability estimate of the scale ($\alpha = .55$) and the items are conceptually related to other

constructs. The first item is more closely related to opinions about citizens, not authorities. The second item confuses the intent of the law with the usage of the law. One participant in the pilot study wrote beside the question: “that is what the law was made for but that is not how it is used.” Because of that, the two items were removed for the final sample. A reliability analysis of the other seven items revealed a good reliability estimate ($\alpha = .73$) for the pilot sample. Items were assessed on a six point Likert scale ranging from 1 = Completely disagree to 6 = Completely agree.

Student conduct. Students answered seven items about their level of respect for and compliance with school rules and authorities (e.g. “I follow the rules of this school”). These items were written by the PI in conjunction with a psychologist and educator in Brazil. The items were also reviewed by two additional Brazilian educators and were considered a good assessment of self-perceived school conduct from Brazilian schools. The rationale of writing the items were to have a self-assessment scale that could be used in various schools, regardless of differing rules across institutions. Many of the current assessments on school conduct define it in a clinical nature and assess the frequency of specific behaviors. The studies found concerning Brazilian schools were mostly qualitative in nature or from the perspective of the teachers and administrators. Nine items concerning self-perceived school conduct were included in the pilot study. An exploratory factor analysis of the pilot study data revealed these two items loaded on a separate factor than the rest. These items related to more serious school conduct issues (“I am sent to the principal’s office because of my behavior” and “I have been suspended from school”). Although the combination of all nine items had a satisfactory Cronbach’s alpha in the pilot study ($\alpha = .69$), these items did not theoretically fit into more mild disruptive behavior of *indiscipline*. For this reason, these two questions were dropped for the final research design. The remaining

seven items had a high internal correlation and a Cronbach's alpha analysis revealed a good reliability estimate ($\alpha = .74$) for the pilot study sample. Students answered these items on a six point Likert scale from 1 = Never to 6 = Always.

BJW, school climate, perceptions of legal authorities, and student conduct, were calculated using the mean of the scores on the scales' items. A higher mean score indicates a higher endorsement of the construct. To see all items in the final questionnaire, please refer to Appendix A.

Research Questions

How do Brazilian adolescents' perceptions of justice relate with their school conduct, perceptions of school climate, and legitimization of legal authorities?

What is the pattern of development of both General BJW and Personal BJW across school grade levels and family income levels?

Are there differences between students' perceptions of justice based on their ethnicity, school type, and family income?

Procedure and Participants

Participating schools

Three schools agreed to participate in the study: a private faith-based school, a public school, and a military school. The private school is rooted in Catholic values, but does not have mandatory religious practices. According to the administration, they foster universal values of peace and justice and have students of various religious backgrounds. It is located in a middle class residential neighborhood and most of its students are expected to attend college.

The public school is located in the outskirts of the city in a low income neighborhood. The principal pointed out that very few students in the school expect to attend college and many

drop out before graduating high school, this is noted by the lower number of students in the higher grade levels. According to the principal, few students choose to take the ENEM (National High School Exam). This is a non-mandatory standardized exam intended to facilitate the entrance of public school students to the universities.

The military school is a publicly funded school. Different from the other two schools, students must pass an entrance exam to enroll in the school. It is a prestigious school known for academic rigor. Although it is official policy that students must pass an exam to enter the school, many community members mentioned that those who have strong social, political, or law enforcement connections are admitted in the school. The school can serve as a preparatory setting for both civilian and military postsecondary institutions. It is a school providing education from 6th through 12th grade for any students regardless of their career trajectory. The school states its purpose is to prepare students to be qualified workers and good citizens in accordance with the values and traditions of the Brazilian military (CMC, n.d.). The school administration is run in part by the Brazilian military under the supervision of the Department of Education. The school is composed of both civilian and military teachers and administrators.

Procedures

Students enrolled in eighth grade through senior year in high school were invited to participate by voluntarily completing surveys during class time. The administrations of the schools formally granted access to the classrooms to request student participation during class time. Students were informed of the voluntary nature of the study and asked to complete an informed consent form with their parents. They then completed the instruments anonymously during class time.

The military school data and the public school data were primarily collected in the evening, when only grades 10-12 are in session. Because of that, these schools include mainly students from 10-12 grade. The private school has data from 8-11th grade. Students in the senior year were not allowed to participate in the survey because they were preparing for their exams at the time of data collection and the school administration did not want to disturb their preparation.

Participants

Four-hundred and seventy-five students participated in the study. Of these, 218 (46.1%) were male. There were 137 from the public school, 133 from the private school, and 205 from the military school. Students ranged from 12 to 19 years old with most being 15 (30.6%) or 16 (23.3%). All participants were between 8th grade to 12th grade. The majority of the students self-identified as White (70.1%), while 19.6% identified as Pardo (brown), 3.2% identified as Preto (Black), 2.3% identified as Amarelo (Asian), and 1.1% identified as Indigena (Native American). Eighteen participants (3.8%) left this question blank. Since there were not sufficient participants in three of the minority categories, this variable was dichotomized as majority (70.1%)/minority (26.1%) categories. Students were asked to self-identify their family's income bracket out of three options; 26.7% reported being in the lowest bracket (1-3 minimum wage equivalents), 35.4% reported being in the middle bracket (4-6 minimum wages), and 25.3% reported being in the highest bracket (7 or more). See the demographics section for details about minimum wage. A total of 60 participants (12.6%) left this variable blank.

Planned Analyses

A factor analysis was conducted to establish construct validity and Cronbach's alpha coefficients was computed to ensure scale reliability before proceeding with the analyses of the research questions. Descriptive statistics (means and standard deviations) were computed for all

study variables and the reliability coefficient (i.e., Cronbach's alpha) of each scale was calculated for the sample.

To address the overarching question of how BJW (General and Personal) relate to student conduct, school climate, and justice of legal authorities, structural equation modeling (SEM) analysis was conducted. The proposed SEM model (see Figure A) was analyzed to understand the nature of these relationships. This model was compared with models assessing the direct effect of Personal BJW on School conduct and on the direct effect of General BJW and justice of legal authorities (Figure B) and a partially mediated model (Figure C).

To address the second question, a Two-way MANOVA was conducted to understand the progression of BJW (General and Personal) across the age groups and between the school types. To address the third question, a three way MANOVA on the five latent constructs (Personal BJW, General BJW, school climate, perception of legal authorities, and student conduct) was conducted to test for significant differences and interactions among family income, school, and ethnicity. Discriminant analyses were conducted as a follow-up procedure.

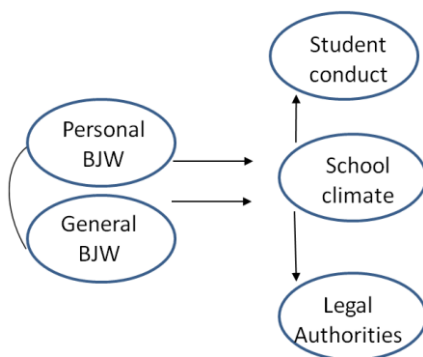


Figure A. Mediated model

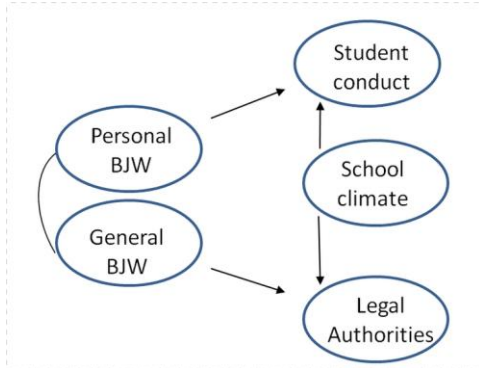


Figure B. Direct model

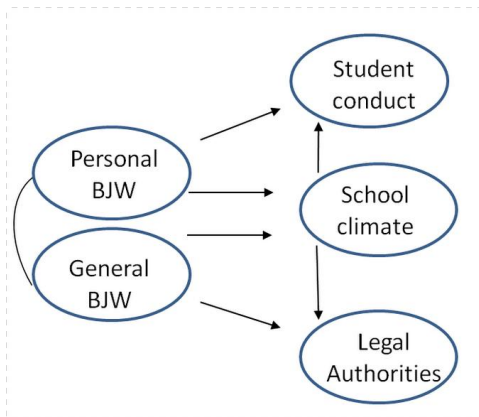


Figure C. Partially mediated model

Chapter IV: Results

The purpose of this study is to understand the development of Brazilian adolescents' perceptions of justice and how these perceptions relate to school climate, perceptions of legal authorities, and student conduct. This chapter begins by explaining the preliminary analysis necessary to establish validity and reliability in the Brazilian sample. Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) were used to establish construct validity on the five latent constructs, and Cronbach's alpha values were computed to understand the internal consistency of the items within each variable. Descriptive and correlational statistics are then provided to understand the initial scope of the analysis and provide an overall picture of the variables and their relationships with each other. Then, the chapter is organized based on the three guiding research questions (RQs):

RQ-I: How do Brazilian adolescents' perceptions of justice relate to their school conduct, perceptions of school climate, and perceptions of legal authorities?

RQ-II: What is the pattern of development of both General BJW and Personal BJW across adolescence and between schools?

RQ-III: Are there differences between students' perceptions of justice based on their ethnicity, family income and schools?

Validity and Reliability

CFA of Personal BJW and General BJW. This analysis encompassed only the items from Dalbert's (1999) Personal and General BJW questionnaire. These scales have been used in various cultures with samples from similar ages as this sample. These scales had well established validity and reliability, and there are sufficient data and theory to support the

existence and distinction of two latent variables (Dalbert, Montada, & Schmitt, 2012; Dalbert, Montada, & Schmitt, 2014).

A confirmatory factor analysis (CFA) was conducted through the open-software R. Multivariate normality test was significant ($p < .05$) indicating violation of normality assumption. Because of this violation, the Yuan-Bentler estimation method was used. The χ^2 significance test is not robust to non-normality; therefore, the model fit was assessed through Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). The model converged after 69 iterations. The model was considered to have adequate fit if the TLI and the CFI were $\geq .90$ and if the Standardized Root Mean Square Residual (SRMR) and the Root Mean Square Error of Approximation were $\leq .08$ (Kline, 2011). As expected, the model fit the data well: CFI = .91, TLI = .90, SRMR = .047, RMSEA = .053. The Personal and General BJW functioned as independent latent variables that adequately fit the theoretical framework for the scales.

EFA of school climate, legal authorities, student conduct. Although there was plenty of theory and prior data to run a CFA on the Personal and General BJW questions, there is not sufficient data to support a CFA on the other three latent constructs (school climate, student conduct, legal authorities). An exploratory factor analysis (EFA) was conducted to assess the structure of the observed items. Based on theory and the research design mentioned in the previous chapters, three latent factors were expected to emerge. To test the number of factors in the data, a parallel analysis, a minimum average partial correlation (MAP), and a very simple structure analysis (VSS) were conducted. The parallel analysis revealed the three-factor solution extracted the most variance. The MAP revealed that the three factor solution had the smallest partial correlation (.016) compared to solutions with fewer ($\geq .018$) or more ($\geq .017$) factors. The

questionnaire was designed with a VSS assumption, with one item relating to only one latent variable, and the VSS plot showed that it was maximized at a three-factor solution. After the confirmation of the number of factors in the data, an EFA was conducted extracting three factors using Principal Axis extraction method and the Promax rotation method with a Kaiser normalization. The rotation converged in five iterations.

Each item was considered to load on a factor when the factor loading was equal to or greater than .30 (Tabachnick & Fidel, 2013). As expected, all seven of the school climate items loaded on the same factor. Similarly, all items related to student conduct loaded on the second factor. According to the research design, seven items related to legal authorities were expected to load on the same factor. However, only five of the seven items loaded on the same factor. Of these, four questions (items *Authorities 4-7*) related to law enforcement authorities. The items that did not load encompassed other legal authorities such as legislative and judicial authorities. See Table 1.1 for individual factor loadings.

Table 1.1

Factor Loadings, All Schools

	School Climate	Student Conduct	Legal Authorities
Climate14	.649		
Climate15	.653		
Climate16	.619		
Climate17	.647		
Climate18	.687		
Climate19	.607		
Climate20	.507		
Authorities1			.317
Authorities2			
Authorities3	.391		
Authorities4			.677
Authorities5			.635
Authorities6			.450

Authorities7	.632
Conduct1	.555
Conduct2	.526
Conduct3	.618
Conduct4	.742
Conduct5	.775
Conduct6	.571
Conduct7	.513

Note. Only loadings > .30 are included in the table.

The two items may have failed to load because one of the schools sampled ($n = 205$) is a military school and has much more exposure to law enforcement officials compared to students in the other schools. At the military school, students have regular interactions with police officers through the school authorities and administration. It is possible that students within this school have a more specialized construct for law enforcement; thus, the questions related to law enforcement did not load on the same factor as the other questions related to other legal authorities. Since the inclusion of the military school was not in the original proposal, an EFA was conducted only on public and private school students ($n = 370$) to see if these were consistent with the proposed research design. The EFA was conducted utilizing the Principal Axis factoring extraction method and the Promax rotation method. In the results, the remaining two items loaded as expected on the same factor. However, one of the law enforcement items (item *Authorities 6*) no longer loaded. *See Table 1.2 below.* This indicates that this sample is somewhat consistent with prior research (Gouveia-Pereira, et al., 2003), but there are small differences by school. It is also important to note that adolescents are in an active phase of exploring their opinions of authorities, and thus this research is measuring developing constructs. It is possible that for older populations this construct would behave more consistently.

Table 1.2

Factor Loadings, Private and Public Schools Only

	Student Conduct	School Climate	Legal Authorities
Climate14		.517	
Climate15		.610	
Climate16		.665	
Climate17		.663	
Climate18		.619	
Climate19		.519	
Climate20	.331	.469	
Authorities1			.316
Authorities2			.414
Authorities3		.346	.387
Authorities4			.707
Authorities5			.554
Authorities6			
Authorities7			.352
Conduct1	.440		
Conduct2	.440	.309	
Conduct3	.630		
Conduct4	.738		
Conduct5	.745		
Conduct6	.611		
Conduct7	.584		

Note. Only loadings > .30 are in the table.

The inclusion of the military school was not originally anticipated in the design and thus the survey was not designed with their specific needs in mind. Since the purpose of the study was to analyze legal authorities on a broad level, the scale was maintained intact for the analysis despite some inconsistent factor loadings. The decision to include all of the questions about legal authorities within the construct was supported by the internal consistency of the items. A reliability analysis was conducted including only the four items related to law enforcement ($\alpha=.68$) and then including all seven items related to legal authorities ($\alpha=.67$). As noted, the reliability of the scale was largely consistent. Although two items did not load in the factor

analysis, there is sufficient internal consistency within the items and their correlation with each other suggest a moderate connection between the items and upholds the original purpose of the study.

A reliability analysis of each construct was conducted prior to the data analysis, and all was considered to have adequate consistency. See Table 2. The reliability analysis results from General and Personal BJW was very consistent with prior research. Personal BJW in this sample had a higher reliability ($\alpha=.76$) than General BJW ($\alpha=.65$). Prior research studies (Dalbert, 1999; Kamble & Dalbert, 2011; Oppenheimer, 2006) have shown that Personal BJW has a stronger consistency than General BJW. This is expected to be because Personal BJW develops earlier and is heavily influenced by parenting practices (Dalbert & Sallay, 2004), while General BJW is a construct more sensitive to adolescent cognitive development and is not yet as strong of a construct in adolescent minds.

Table 2

Reliability Analysis

Scale	Items	Cronbach's α
Personal BJW	7	0.76
General BJW	6	0.65
School Climate	7	0.82
Student Conduct	7	0.80
Legal Authorities	7	0.67

Note. N = 475

Descriptive statistics

Since all scales revealed moderate to high levels of internal reliability, the researcher created a composite score to represent each latent variable by computing the means for all the items in each scale. The means, standard deviations, and correlations among constructs are seen in the table below (Table 3).

As reported in Table 3, gender was not significantly related to any of the perceptions of justice, but there was a significant relationship between gender and student conduct with females reporting better student conduct, $r(471) = .109, p < .05$. There was a negative relationship between grade level and General BJW, $r(473) = -.129, p < .01$, indicating that students in higher grades have a lower General BJW. Grade level did not have a significant relationship with any other construct ($p > .05$). Membership in a minority ethnic group was negatively related with students' Personal BJW, $r(455) = -.111, p < .01$, school climate, $r(455) = -.135, p < .01$, student conduct, $r(455) = -.183, p < .01$, and perceptions of legal authorities, $r(455) = -.096, p < .05$. White students were more likely to judge their personal lives, the school, and legal authorities more fairly than their peers who identified as minorities. There was no significant relationship between ethnicity and General BJW $r(455) = .015, p > .05$. Family income had a positive relationship with Personal BJW, $r(413) = .134, p < .01$, and perceptions of legal authorities, $r(413) = .243, p < .01$, but a negative relationship with General BJW, $r(413) = -.150, p < .01$. This indicates that students from higher income households perceived their personal worlds and legal authorities to be fair, but rated the world in general as less fair than those in lower-income households.

Among the five latent constructs, Personal BJW was significantly correlated ($p < .01$) with all constructs as predicted, and most strongly correlated with perception of the school climate as fair, $r(473) = .478, p < .001$. General BJW was significantly correlated ($p < .01$) with all constructs except student conduct, $r(473) = .017; p > .01$. School climate and perceptions of legal authorities were significantly correlated with all constructs ($p < .01$).

Table 3

<i>Correlations and Descriptive Statistics</i>									
Variable	1	2	3	4	5	6	7	8	9
1 Gender	1								
2 Grade	-0.090	1							
3 Ethnicity	-0.100*	-0.049	1						
4 Family income	-0.130**	0.088	0.091	1					
5 Personal BJW	-0.030	0.029	-0.111*	0.134**	1				
6 General BJW	0.048	-0.129**	0.015	-0.150**	.282**	1			
7 School Climate	-0.060	-0.001	-0.135**	0.068	.478**	.251**	1		
8 Student Conduct	0.109*	0.084	-0.183**	0.057	.252**	.017	.306**	1	
9 Legal authorities	0.047	0.052	-0.096*	0.243**	.230**	.146**	.283**	.219**	1
Mean					3.98	3.310	4.18	4.72	3.12
SD					0.79	.820	0.94	0.73	0.83
Skew					-0.472	-.531	0.167	-1.145	0.24
Kurtosis					0.208	.079	-0.374	2.138	-0.17

Note. For gender, 1 = male and 2 = female, for ethnicity, 1 = majority and 2 = minorities. All subscales are on a 1-6 Likert scale with higher values indicating stronger endorsement of the construct. * $p < .05$, ** $p < .01$

Research Question I Results

RQ-I : How do Brazilian adolescents' perceptions of justice relate to their school conduct, perceptions of school climate, and legitimization of legal authorities?

To address the overarching question of how BJW (General and Personal) relate to student conduct, school climate, and justice of legal authorities, structural equation modeling (SEM) analyses were conducted. Based on prior research outlined in chapter two, three models were proposed and analyzed, the mediated model (Figure 1, Model A), the direct model (Model B), and the partially mediated model (Model C). These models were tested utilizing the R software and the weighted least squares (WLS) estimation method.

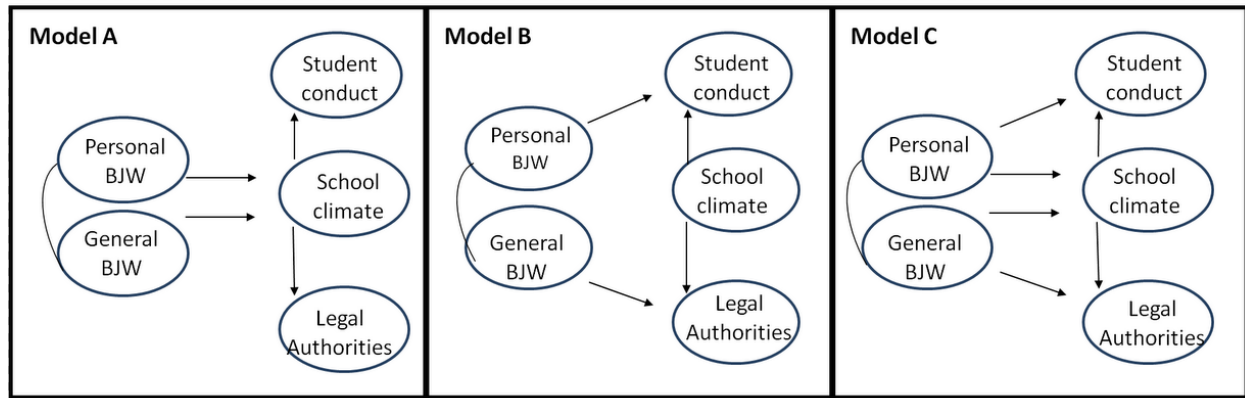


Figure 1. Structural Equation Models Tested

Prior to testing the hypothesized models, individual CFAs were conducted on each construct to investigate whether the data fit the factor structures of the theoretically proposed latent variables. The variables were considered to have adequate fit if the Tucker Lewis Index (TLI) and the Comparative Fit Index (CFI) were $\geq .90$ and if the Standardized Root Mean Square Residual (SRMR) and the Root Mean Square Error of Approximation were $\leq .08$ (Kline, 2011). See Table 4 for the model fit statistics for each latent variable.

Table 4

Model Fit Statistics for Individual CFAs

	$\chi^2(df)$	CFI	TLI	RMSEA 90% C.I.	SRMR
Personal BJW	7.161(14)	1.00	1.015	.000-.014	.025
General BJW	15.27(9)	.981	.968	.000-.071	.038
School Climate	59.99(14)*	.960	.940	.063-.107	.074
Legal authorities	59.60(14)*	.910	.865	.064-.109	.068
Student Conduct	24.84(14)	.985	.978	.010-.067	.062

Note. * $p < .05$

The latent variables fit as predicted and the analysis of the models proceeded as planned. Each of the three models proposed were analyzed through the R software utilizing the lavaan package. For the SEM analysis, χ^2 was not considered an adequate test for model fit because the data are not multivariate normal, an inherent assumption of the χ^2 test. For this reason, the CFI,

TLI, RMSEA, and SRMR fit statistics were used. The WLS estimation method was used, which is considered robust to non-normal data (Kline, 2011).

Mediated Model

The first planned model for analysis is the mediated model. The proposed model predicts that both Personal and General BJW influence students' perception of the school climate, which in turn influences their perceptions of legal authorities and their school conduct (Figure 2, Model A). The model converged after 63 iterations. Results from the SEM fit statistics for the mediated model revealed to have good fit: $\chi^2(521) = 895.78$, CFI = .931, TLI = .926, RMSEA [.037-.047], SRMR = .066.

The model revealed that Personal BJW significantly predicted students' perceptions of the fairness of school climate ($\beta = .611, p < .01$). However, contrary to previous research (Peter & Dalbert, 2010), General BJW did not predict fairness of school climate ($\beta = .136, p > .05$). As expected, school climate significantly predicted perceived justice of legal authorities ($\beta = .426, p < .01$) and student conduct ($\beta = .510, p < .01$). Personal BJW had a significant indirect effect on student conduct through school climate ($\beta = .260, p < .01$), but General BJW did not have an indirect effect on perceptions of legal authorities through school climate ($\beta = .069, p > .05$). The model accounted for 18% of the variance in student conduct ($R^2 = .181$), 45% of the variance in perceptions of school climate ($R^2 = .453$), and 26% of the variance of legal authorities ($R^2 = .260$). See Figure 2. Note that all path coefficients are standardized.

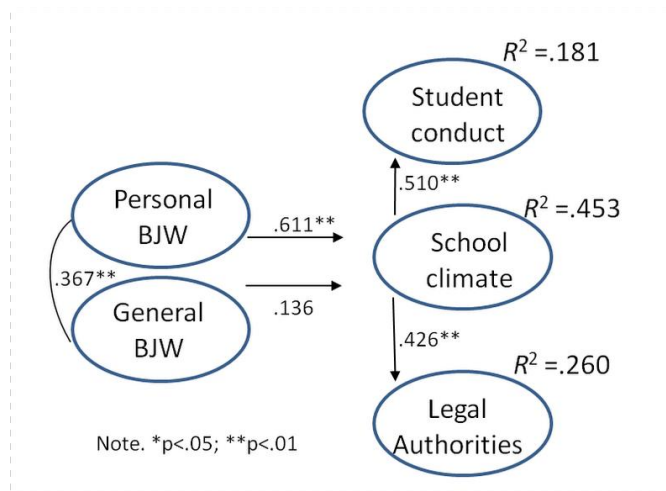


Figure 2. Mediated model

Direct model

The second analysis removed the direct relationships between Personal and General BJB and school climate and accounted only for the relationships of Personal BJB and school climate and student conduct, and General BJB and school climate on legal authorities. The model converged after 67 iterations and revealed good fit: $\chi^2(519) = 862.38$, CFI = .937, TLI = .932, RMSEA[.036-.045], SRMR = .065. The model revealed that Personal BJB did not directly predict student conduct ($\beta = .108$, $p > .05$), and General BJB directly predicted perceptions of legal authorities ($\beta = .238$, $p < .01$). As noted in the first model, school climate significantly predicted student conduct ($\beta = .331$, $p < .01$) and perceptions of legal authorities ($\beta = .399$, $p < .01$). This model accounted for 16% of the variance of student conduct, and 27% of the variance of legal authorities. See Figure 3.

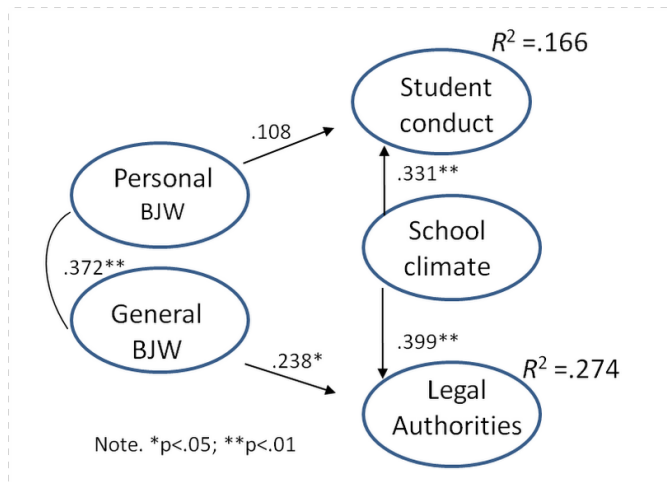


Figure 3. Direct model

Partially Mediated Model

The third analysis included both direct and mediated relationships between Personal BJW and student conduct, and General BJW and legal authorities. Just as the previous model, the model converged after 67 iterations and yielded the same fit because both models accounted for the same amount of variance. Personal BJW significantly predicted perceptions of school climate ($\beta = .590, p < .01$), but General BJW did not ($\beta = .089, p > .05$). Personal BJW did not directly predict student conduct ($\beta = .108, p > .05$), but did have a significant indirect effect on student conduct through school climate ($\beta = .196, p < .01$). General BJW did significantly predict perceptions of legal authorities ($\beta = .238, p < .05$), but did not have a significant indirect effect on legal authorities through school climate ($\beta = .036, p > .05$). The total effect of Personal BJW, school climate on behavior was significant ($\beta = .304, p < .01$), and the total effect of General BJW, school climate, on authorities was significant ($\beta = .273, p < .05$). The model accounted for 16% of the variance of student conduct ($R^2 = .166$), 39% of the variance of school climate ($R^2 = .396$), and 27% of legal authorities ($R^2 = .274$). See Figure 4.

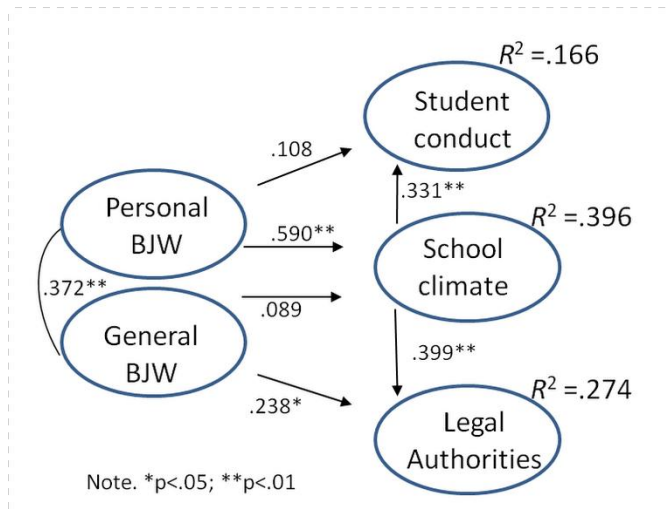


Figure 4. Partially Mediated Model

Model Comparison

Because the direct model and the partially mediated model accounted for the same variance, there were no differences between their model fit. Using the chi-square difference test, the three models were compared to understand which model best fit the data. All three models revealed good model fit, but the direct model and the partially mediated model fit significantly better ($p < .05$) than the mediated model, $\chi^2_D = 6.679$. The direct and the partially mediated models accounted for the direct relationship between General BJW and legal authorities ($\beta = .238$), which was unaccounted for in the mediated model.

Conclusion for RQ-I

The models proposed in this research revealed good model fit and adequately showed the relationship between just world beliefs, school climate, student conduct, and legal authorities. The analysis of the models revealed that Personal BJW, but not General BJW, predicts the perception of school climate as fair.

The mediated model was the primary model proposed in prior research and it accounted for the greatest amount of variance of school climate ($R^2 = .453$). The mediated model best

explained the relationship between Personal BJW, school climate, and student conduct. This model showed that Personal BJW was only significant when it was mediated through school climate ($\beta = .304, p < .01$). The partially mediated model and the direct model revealed that Personal BJW did not directly predict student conduct ($\beta = .108, p < .05$).

The partially mediated model was useful in understanding that, in this Brazilian sample, General BJW did not predict school climate. The mediated model had already revealed that General BJW was not a significant predictor of school climate ($\beta = .136, p > .05$), but its relationship became even smaller ($\beta = .089$) once a direct relationship between General BJW and legal authorities was modeled. The direct model best explained the relationship between General BJW, school climate, and legal authorities. Students' General BJW ($\beta = .238, p < .01$) and their assessment of the fairness of their school climate ($\beta = .399, p < .01$) predicted their evaluation of the justice of legal authorities ($R^2 = .273$). The partially mediated model and the direct model revealed that General BJW predicted adolescents' perceptions of legal authorities ($\beta = .238, p < .05$). The implications of these findings are discussed in depth in chapter five.

Research Question II Results

RQ-II: What is the pattern of development of both General BJW and Personal BJW across adolescence and between schools?

Based on prior research, Personal and General BJW were expected to be lower among the older grades, but Personal BJW was expected to be higher than General BJW throughout all age groups (Adorić, 2004; Barreiro, 2013; Dalbert, 2001; Dalbert & Dzuka, 2004; Dalbert & Sallay, 2004; Furnham & Rajamanickam, 1992; Maes & Schmitt, 2004; Oppenheimer, 2004; Oppenheimer, 2006; Peter & Dalbert, 2010; Sanches & Gouveia-Pereira, 2010; Schönplflug &

Bilz, 2004). To address the second research question, a two-way multivariate analysis of variance (MANOVA) was conducted to understand the progression of BJW (General and Personal) across grade levels and between the school types (public, private, military). The assumptions for a MANOVA include independence, multivariate normality and equality of covariance matrixes. Multivariate normality was assessed through Mardia's test (Mardia, 2004) and found to be not significant ($p > .05$) indicating it did not violate this assumption. Equality of covariance matrixes was assessed through Box's M test and met the criteria ($p > .05$) for the MANOVA.

There was a significant interaction between school and grade level, indicating significant differences across the groups in the areas of Personal and General BJW. See Table 5.1 and Table 5.2. To follow-up the interaction and group differences noted through the MANOVA analysis, Cohen's d values were calculated (See Tables 7 & 8).

Table 5.1

MANOVA: Personal and General BJW Across Schools and Grade Levels

	F	Df	p	Partial η^2
Grade	5.190	8	.000	.043
School	6.614	4	.000	.028
School x Grade	4.155	10	.000	.043

Table 5.2

Descriptive Statistics Across Schools and Grade Levels: Mean (SD)

	8 th	9 th	10 th	11 th	12 th
Personal BJW					
Private	3.91 (.67)	3.63 (1.12)	4.18 (.64)	4.33 (.65)	
Public		4.22 (.72)	3.04 (.91)	3.90 (.67)	3.28 (1.06)
Military		3.73 (.94)	3.79 (.76)	4.3 (.69)	3.99 (.77)
General BJW					
Private	3.1 (.69)	3.42 (.85)	3.43 (.74)	3.36 (.76)	
Public		3.88 (.94)	3.22 (.93)	3.41 (.79)	3.3 (.67)
Military		3.41 (.67)	3.17 (.77)	3.17 (.76)	3.02 (.84)

Note. Variables are on a scale ranging from 1=Strongly Disagree to 6=Strongly Agree

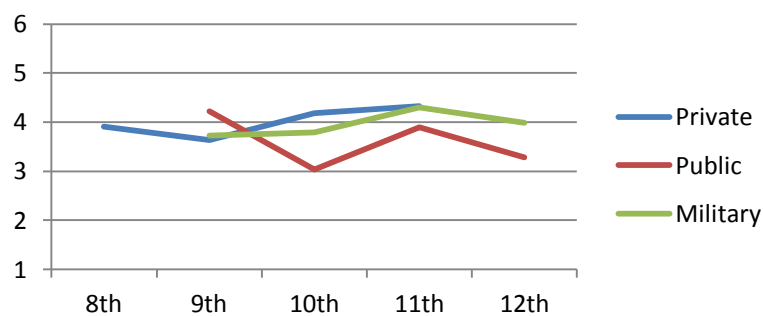


Figure 5. 1. Development of Personal BJW

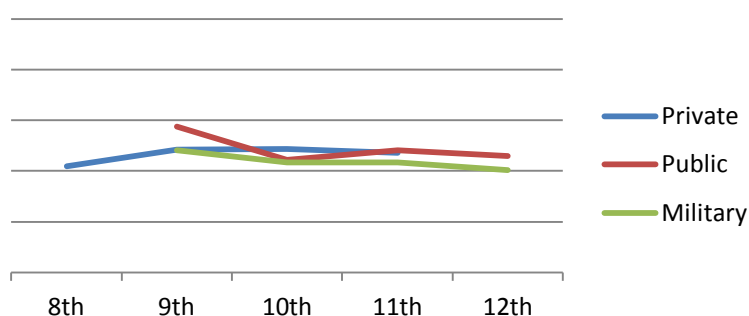


Figure 5.2. Development of General BJW

These graphs revealed that there were differences and interactions between schools and grade levels among students' Personal BJW, yet considerable overlap between General BJW values across categories.

Personal BJW

Figure 5.1 reveals that both the private and the military schools share similarities, both indicating a slight upward trend of Personal BJW across grade levels. Public school students' Personal BJW tended to be lower than the private and military school students' Personal BJW. As a follow-up test to the differences noted between schools' Personal BJW, a post hoc contrast was calculated between the Personal BJW of the private school and the public school. This contrast was significant $t(268) = 3.17$, $p < .01$, Cohen's $d = .36$, revealing that public school students' Personal BJW was significantly lower than the private school students' Personal BJW.

Among public school students, Personal BJW differed at each grade level with a sharp drop between 9th and 10th grade, the transition into high school. This contrasted with the private school students' Personal BJW, which was higher among 10th graders compared to 9th graders. The sharp change in the public school students' Personal BJW between 9th ($M = 4.22$, $SD = .72$) and 10th grade ($M = 3.044$, $SD = .912$) had a large effect size, Cohen's $d = 1.44$, indicating a meaningful difference. Among the private school students, Personal BJW increased between 9th and 10th grade with a moderate effect size, *Cohen's* $d = .60$. See Table 7 and 8 for all Cohen's d values.

General BJW

The analysis revealed there was less fluctuation between General BJW across grade levels and between schools compared to the differences across Personal BJW. Figure 5.2 showed a slight downward trend of General BJW as grade levels increase, but, overall, the schools' levels of General BJW overlap and there is not much difference. The most notable variation in General BJW values was among public school students during the transition to high school (9th to 10th grade), Cohen's $d = .71$. This medium effect size indicates that students in their first year of high school ($M = 3.22$, $SD = .93$) had meaningfully lower General BJW compared to those one year below ($M = 3.88$, $SD = .94$).

Schools

The Figure 5.1 and 5.2 are helpful to understand the fluctuations of Personal BJW and see the similarities in General BJW. The three graphs below (Figure 6.1, 6.2, 6.3) separate the schools to understand how students in different schools make the distinction between Personal and General BJW across grade levels. Among the public school students (Figure 6.1), there was considerable overlap between their evaluations of Personal and General BJW across grade levels.

However, among the other two schools (Figure 6.2, 6.3), the differences between General and Personal BJW magnified as grade levels increased.

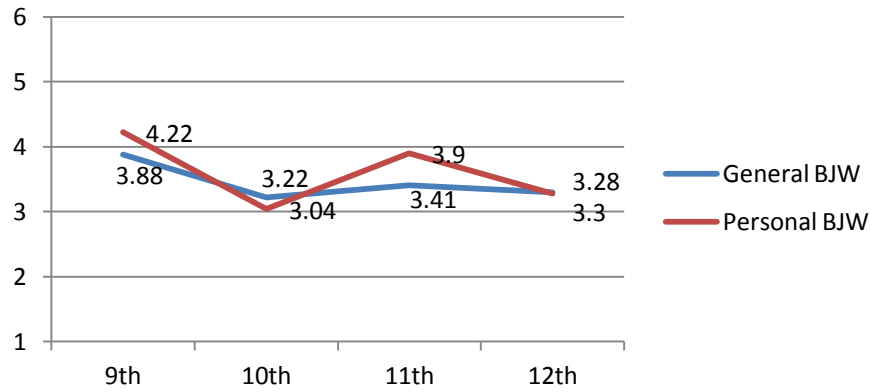


Figure 6.1. *Public school*

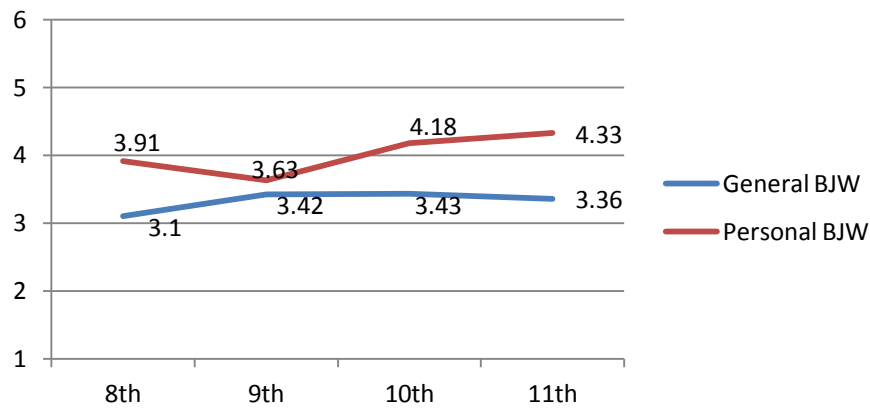


Figure 6.2. *Private school*

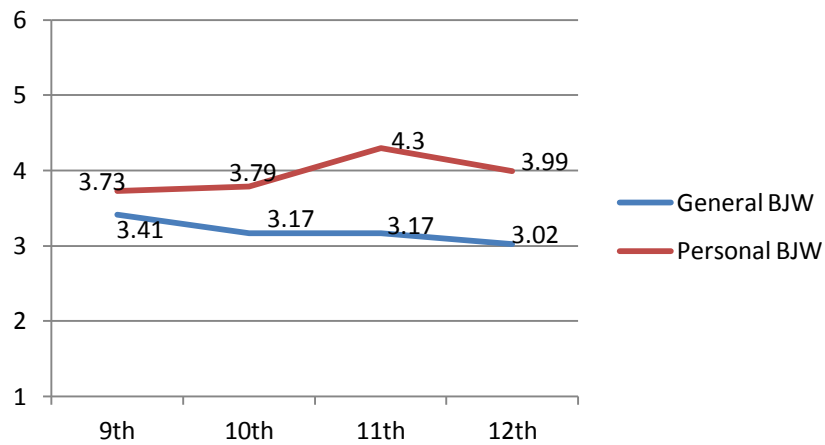


Figure 6.3. *Military school*

As noted in chapter two, past research has shown a developmental decrease in Personal and General BJW across adolescence. Cohen's d values between the youngest and the oldest groups in each school help understand the magnitude of the difference between the age groups. Among public school students, both Personal ($d = -1.04$) and General BJW ($d = -.71$) decreased comparing 9th and 12th graders. In the military school, Personal BJW was higher among the older students compared to the 9th graders with a small effect size ($d = .30$) and General BJW was lower with a medium effect size ($d = -.51$). Private school students in the older grade levels had higher Personal ($d = .67$) and General BJW ($d = .36$) compared to those in the lowest grades. These findings indicate that there is not a clear developmental trend for Personal BJW and General BJW among these Brazilian students. Instead, their developmental trajectory is dependent upon the educational context.

Table 6

Cohen's d Between Grades: Lower Diagonal: Personal BJW; Upper Diagonal: General BJW

	Public				Private				Military			
	9th	10th	11th	12th	8th	9th	10th	11th	9th	10 th	11th	12th
8 th	-	-	-	-	-	0.41	0.46	0.36	-	-	-	-
9 th	-	0.71	0.54	0.71	0.30	-	0.01	0.07	-	0.33	0.33	0.51
10 th	1.44	-	0.22	0.10	0.41	0.60	-	0.09	0.07	-	.00	0.19
11 th	0.46	1.08	-	0.15	0.67	0.76	0.23	-	0.69	0.70	-	0.19
12 th	1.04	0.24	0.70	-	-	-	-	-	0.30	0.26	0.42	-

Note. All numbers are in their absolute value. See the means in Table 5.2 to understand the direction

Table 7

Cohen's d Between Schools

	Personal BJW			General BJW		
	Public x Private	Public x Military	Private x Military	Public x Private	Public x Military	Private x Military
9 th	0.63	0.58	0.01	0.51	0.58	0.01
10 th	1.45	0.55	0.89	0.25	0.06	0.34
11 th	0.65	0.59	0.04	0.06	0.30	0.25
12 th	-	0.77	-	-	0.37	-

Note. All numbers are in their absolute value. See the means in Table 5.2 to understand the direction

Conclusion for RQ-II

A two-way MANOVA revealed a significant interaction between schools and grade levels' Personal and General BJW. Further investigation revealed that General BJW maintained similar levels throughout most schools and grade levels, while Personal BJW fluctuated throughout contexts. Personal BJW tended to increase across grade levels for private and military school students while decreasing among public school students.

Public school students' Personal and General BJW values were very similar at all grade levels. In contrast, the private and the military schools had increasingly different conceptualizations of the Personal and General BJW, with differences magnified at older grade levels. Public school students in their first year of high school (10th grade) reported lower Personal and General BJW compared to those in 9th grade. Although public school students' Personal BJW decreased in high school, private school students' Personal BJW increased. These results are discussed in depth in chapter five.

Research Question III Results

RQ-III: Are there differences between students' perceptions of justice based on their ethnicity, school type, and family income?

To address the third question, a three way MANOVA on the four latent constructs of justice (Personal BJW, General BJW, school climate, legal authorities) were conducted to test for differences and interactions among family income (low, medium, high), school (public, private, military), and ethnicity (majority, minority). Although there were five ethnicity categories available, there were very few students who identified themselves as Native Americans (1.1%), Asian (2.4%), or Black (3.2%). Seventy percent identified as White, and 19.6% identified as *Pardo(Brown)*. This is consistent with city statistics that report 74% White, 3.6% Black, 17.3%

Pardo/(*Brown*), and 7% Asian and Native American (IBGE, 2010). Because of the low representation of other ethnic groups, this variable was dichotomized as *majority* or *minority* status.

At the proposal stage of the research, student conduct was included as a dependent variable in the proposed analysis. However, this variable is not one of the four variables on perceptions of justice (as guided by the research question), nor is it conceptually similar to the other latent variables. In addition, student conduct is not correlated with General BJW ($r=.017$, $p>.05$). Multivariate analysis of variance is appropriate when dependent variables are related conceptually and are at least moderately correlated (Finch & French, 2013). Since student conduct does not overlap theoretically, nor is it correlated with one of the variables, it was not included in this analysis.

The original proposal meant to assess differences among students' perceptions of justice if they had been held back in school or not. This was originally included because of the large percentage of students that are held back in the Brazilian school system, over one-third of students (PISA, 2012). It was necessary to abandon this plan because some of the surveys were mistakenly distributed without that item on the questionnaire. However, analysis of the data with the information received ($n=329$, 69.3%) indicated no significant difference ($F=2.117$, $df=4$, $p>.05$) between students who had been held back ($n=92$, 28%) and those who had not ($n=237$, 72%).

Analysis of Missing Data

Preliminary assessment of missing data revealed a small amount of missing data in the variables for ethnicity ($n=18$, 3.8%) and family income ($n=60$, 12.6%). Although this is not a large proportion of missing data, it was taken into careful consideration during the analysis

process. That missing data was considered to be missing at random (MAR) because the missing value is likely dependent on some measured characteristic of the individual but not on the missing value itself (Finch, 2010). Since the data might not be missing completely at random (MCAR), and ignoring the missing data can lead to biased results (Finch, 2010), multiple imputation (MI) was used to account for the missing cases. The MI method creates multiple imputed values for each missing data piece based on variables across the whole dataset. This analysis used the multiple imputation using chained equations (MICE) method, combined with the classification and regression trees (CART) equation. This methodology makes very few assumptions about the distribution of the variables, the relationships between them, and has been shown to reveal the most accurate imputations (Finch, 2015). Means and standard deviations were obtained by averaging the analysis across all five imputed data sets. See Table 8 for descriptive statistics of each latent construct across all levels of analysis.

Table 8

Descriptive Statistics Across Groups: Mean (SD)

	Low	Medium	High	Majority	Minority	Public	Private	Military
Personal BJW	3.83 (.75)	3.99 (.73)	4.12 (.84)	4.03 (.77)	3.82 (.81)	3.82 (.85)	4.11 (.74)	3.99 (.77)
General BJW	3.47 (.83)	3.26 (.80)	3.21 (.81)	3.31 (.81)	3.33 (.84)	3.52 (.88)	3.36 (.74)	3.14 (.78)
School Climate	4.03 (.99)	4.27 (.89)	4.21 (.94)	4.26 (.91)	3.96 (.98)	3.97 (.94)	4.33 (.83)	4.22 (.98)
Legal Authorities	2.84 (.74)	3.18 (.89)	3.36 (.73)	3.17 (.84)	2.99 (.77)	2.70 (.72)	2.92 (.67)	3.54 (.79)

Note. All variables are on a 6 point Likert scale

The data were analyzed in R, utilizing the *mice* package and *cart* (classification and regression trees) method, creating five independently imputed datasets, each with 40 iterations. Upon the imputation process, a MANOVA was subsequently conducted on all five imputed datasets, and the results were pooled for the most accurate interpretation of the findings. The analysis below is a combination of the results from the five imputed datasets.

Multivariate Analysis of Variance

Homogeneity of covariance matrices was assessed through Box's M test and did not violate the assumption of equality ($p > .05$). Multivariate normality was assessed using Mardia's test and found to be significantly different from normal parameters ($p < .05$). However, MANOVA is robust to non-normal data and since the other assumptions were met, MANOVA was still the most appropriate analysis. None of the interactions between the three independent variables was significant ($p > .05$). There were significant main effects in the area of income, $F(2)=8.962$, $p=.01$, $\eta^2=.05$, and school, $F(2)=16.155$, $p=.01$, $\eta^2=.05$, but no significant differences between ethnic groups, $F(1)=2.238$, $p=.15$, $\eta^2=.02$. Discriminant analyses were conducted as a follow-up procedure on school and family income on the imputed data sets was conducted and averaged across all five data sets. The coefficients reported are centered, but not standardized since it was run utilizing the *lda* function in R. All variables were on the same scale (1-6); therefore, the strength of the variables can be interpreted by comparison. See Table 9 for all discriminant analysis coefficients.

Table 9

Coefficients of Linear Discriminant Analysis

	Income	School
Personal BJW	-0.584	0.048
General BJW	0.823	-0.732
School Climate	-0.014	-0.019
Legal Authorities	-0.941	1.326

Family income. Students from different levels of family income had significantly different perceptions of justice, $F(2)=8.962$, $p=.01$, $\eta^2=.05$. This analysis revealed that Personal BJW ($r=-.584$), General BJW ($r=.823$), and legal authorities ($r=-.941$) all contributed in ascending order to the difference between income levels. School climate did not meaningfully

contribute to the difference between groups ($r=-.014$). As seen in Figure 7.1 (below), those in higher family income brackets, had higher perceptions of Personal BJW ($d=.36$) and legal authorities ($d=.71$) compared to the lowest income bracket. However, students in the lowest income bracket had higher General BJW compared to those in the highest income bracket ($d=-.32$).

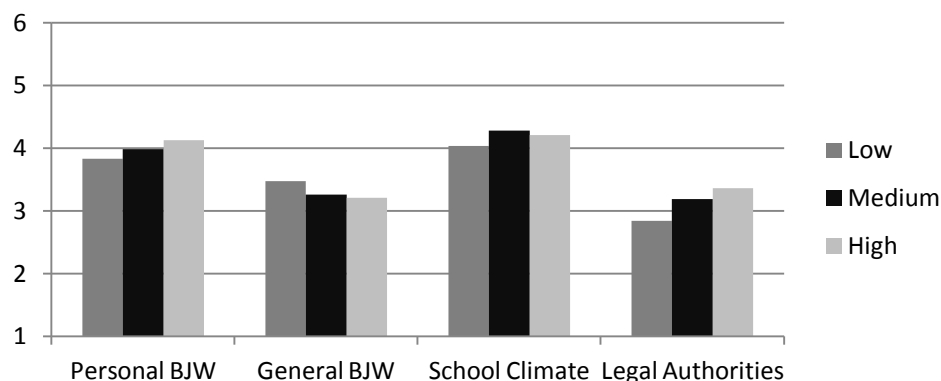


Figure 7.1: *Family income*

School. The follow-up discriminant analysis indicated that General BJW ($r=-.732$) and perceptions of legal authorities ($r=1.326$) were the variables which most meaningfully contributed to the difference between schools. General BJW was highest among students in the public school and lowest among students in the military school ($d=.46$). The most notable difference between the schools was in their perceptions of legal authorities. Students in the military school had the most positive perceptions of legal authorities compared to students in the private ($d=.84$) and public schools ($d=1.11$). Cohen's d values were calculated on General BJW and legal authorities between schools. See Table 10 for each comparison.

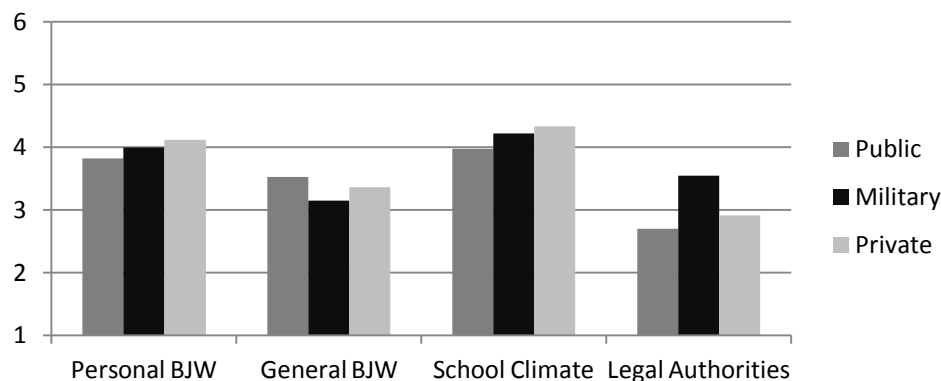


Figure 7.2: *School*

Table 10

Cohen's d Analysis Between Schools

	Private		Public	
	General BJW	Legal Authorities	General BJW	Legal Authorities
Public	0.20	0.32	-	-
Military	0.29	0.84	0.46	1.11

Ethnicity. Although ethnicity did not have a significant main effect in the MANOVA, descriptive statistics revealed that those in the majority ethnic group had higher perceptions of justice compared to those in minority groups in the areas of Personal BJW, school climate, and evaluations of legal authorities, but very similar evaluations of General BJW. Ethnicity was not significantly different; therefore, no follow-up discriminant analyses were conducted. However, Cohen's *d* analyses revealed that Personal BJW ($d=.26$), school climate ($d=.32$), and legal authorities ($d=.21$) all had small effect sizes. See Figure 7.3 for a visual representation of each group's perceptions.

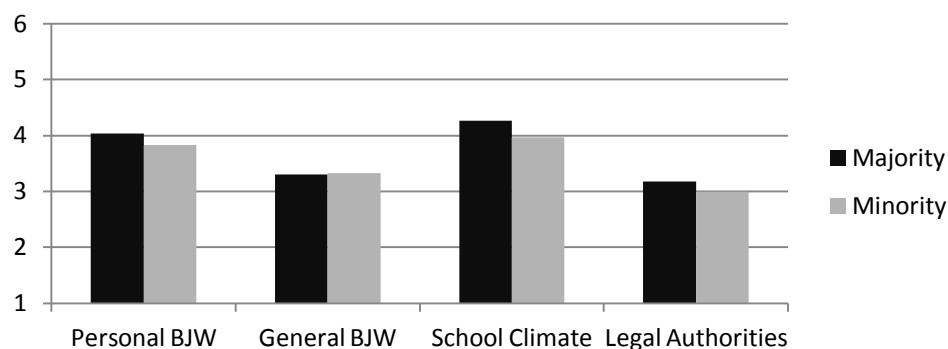


Figure 7.3: *Ethnicity*

Conclusion for RQ-III

Students in different schools and different income brackets have significantly different perceptions of justice. Students in lower income brackets and public schools tend to have higher General B JW, but lower Personal B JW. Students in higher income brackets tended to have higher Personal B JW levels and endorsed more strongly the justice of legal authorities. The greatest variable that contributed the most to the differences between income levels and school was perceptions of legal authorities. Students from more affluent families and students from the military school had more positive perceptions of legal authorities. However, these perceptions were still not very high, lower than four on a six-point Likert scale. Identification in the majority group or one of the minority groups did not reveal a significant difference, indicating that income level and educational context are stronger influencers than ethnicity. However, there is a slight trend of students in the majority group to have higher perceptions of justice in the areas of Personal B JW, school climate, and legal authorities with a small effect size difference. These results are discussed in depth in the following chapter.

Chapter V: Discussion

Past research on the development of adolescent just world beliefs and the relationships with school variables had focused on European environments and had not assessed its impact on perceptions of legal authorities. The purpose of this study was to understand how Brazilian adolescents develop their perceptions of justice and the role these perceptions play in student conduct, perceptions of school climate, and legal authorities. This chapter is structured around the three research questions guiding the study and will integrate the results of chapter four with the existing literature and discuss limitations and directions for future research.

Research Question I Discussion

RQ-I: How do Brazilian adolescents' perceptions of justice relate to their school conduct, perceptions of school climate, and legitimization of legal authorities?

In Chapter IV, three structural equation models were examined, and each one provided additional information to understanding how Brazilian adolescents construct their perceptions of fairness and how these perceptions influence their school behavior. Consistent with prior research (Dalbert & Sallay, 2004; Dette, Stöeber, & Dalbert, 2004; Sallay, 2004), this analysis revealed that General and Personal BJW are correlated but perform different tasks. The models provided a picture of how adolescents constructed perceptions of justice within their lives, the school, and the broader community and society. In the sections below, each level of influence will be analyzed in light of prior research and current findings within the Brazilian context.

Personal BJW Predicting School Climate

Based on prior research both Personal and General BJW were expected to predict school climate (Peter & Dalbert, 2010). However, only Personal BJW significantly predicted evaluation of school climate. Although both were hypothesized to predict school climate, the result of the

current study converged with Kamble and Dalbert's research (2011) among Indian students. In that study, Personal and General BJW both significantly correlated with perceptions of teacher justice, but only Personal BJW was a significant predictor. Similarly, in the current study, General BJW and school climate were significantly correlated $r(473)=.251, p<.01$, but General BJW was not a significant predictor of school climate in the mediated model $\beta=.136, p>.05$, and was even weaker in the partially mediated model, $\beta=.089, p>.05$.

Previous studies have established the relationship between students' Personal BJW and their perceptions of teacher justice (Correia & Dalbert, 2007; Dalbert & Stöeber, 2005; Donat et al., 2012). The current study demonstrated that the relationship between Personal BJW and the school is applicable not only to justice of student-teacher relationships, but also in a broader student conceptualization of the fairness of the school climate as a whole. The stronger the students' Personal BJW, the more likely they will perceive their school climate to be fair. This assessment of fairness in turn influences their adherence to school rules and authorities.

Personal BJW and School Climate Predicting Student Conduct

The relationship between a fair school climate and student conduct was not surprising. Past research has shown that students who believe school authorities are fair and legitimate are much more likely to comply with rules (Bègue & Muller, 2006; Cohn, et al., 2012; Donat et al., 2012; Fagan & Tyler, 2005; Sanches et al., 2012; Way, 2011). However, it was also expected that Personal BJW would be a significant predictor of school conduct. Prior research has shown Personal BJW to predict lower student distress in school even when including assessment of teacher justice (Dalbert & Stöeber, 2005; Peter et al., 2012). Peter and colleagues' (2012) analysis, which included over 800 German adolescents, showed that the effect of Personal BJW on school distress is partially mediated by the perception of justice at school). Notwithstanding,

in the partially mediated model of this current study, the effect of Personal BJW was fully mediated by school climate.

This finding highlights the importance of justice cognitions within the school context. Personal BJW begins developing in early childhood through the consistency and fairness of family climate and individual experiences (Dalbert & Radant, 2004). Although the school may have limited control on the development of Personal BJW, it is highly influential in how Personal BJW influences student conduct. It is noteworthy to remember that student conduct was defined in this study as a cluster of micro-aggressions against school protocol and authorities, which erodes teacher-student relationships (Aquino, 2011). The definition does not encompass major offenses such as physical violence or school suspension. While it is important to predict and prevent major offenses within the school, minor offenses such as classroom disruption and disrespect are more common and can signal a broader malaise of student-authority perceptions of fairness.

This study underscores the inaccuracy of understanding student conduct as an isolated student-level variable. Past research on Brazilian students' behavior in school has focused on the culpability of the individual student, often seen as a 'problem student' (Aquino, 1998). These findings do not remove students' personal responsibilities; however, it suggests that student conduct must be seen within the context of a school climate of fairness. Students' Personal BJW does not directly influence student conduct; but it is mediated by the school climate. This is consistent with Aquino's writings on student conduct in Brazil. Aquino is one of the most well-known researchers on student conduct within Brazilian schools. He proposed (1998) that the problem of poor student conduct in Brazilian schools is historically rooted in a hierarchical non-democratic system. In this light, student conduct is an indicator of a legitimate cry for improved

student-authority relations. He advocated that student conduct was not an innate characteristic of the student, but a sign of the breakdown of the pedagogical contract – hidden or explicit rules that guide student/authority interactions. Similarly, the results of the current analysis point to the importance of the school climate. Students' Personal BJW only influences student conduct through school climate.

Students' justice cognitions within the school context were highlighted during the data collection process. After the administration and collection of the survey, students were asked if they had any additional comments on the research. This feedback was an informal process, meant to add to the researcher's knowledge base. In one classroom, a student verbalized that rule enforcement at that school was influenced by the parents' level of influence in the community; students whose parents had greater power faced lighter rule enforcement. Another student mentioned how pleased he was to receive a survey about his opinions on this topic. He said adolescents are rarely asked to provide their perspective, and he thanked the researcher for providing a venue to do so. This information was obtained informally; however, it provided insight into the importance of adolescents' self-perception of fairness, and their self-perceived voice within the school.

The findings of this research support a mediated relationship between Personal BJW and student conduct. However, this study does not reject or downplay the importance of BJW. BJW can help students assimilate experiences of justice, protect against the fear of random injustice, and enable the establishment of a high internal locus of control (Dalbert, 2004, 2009). Nonetheless, the mediated relationship emphasizes the power of the school climate to mediate this relationship. The mediated effect is a hopeful sign for school administrators and educators because it advocates for the role that a positive school climate can play in shaping students'

justice perceptions and its relationship with student conduct. See the Implications section for further elaboration.

General BJW and School Climate Predict Perceptions of Legal Authorities

This study supported the initial hypothesis that evaluations of school climate predict how fairly students evaluate legal authorities. How students view the school influences how they perceive authorities outside of the school. For example, an adolescent who repeatedly feels unfairly treated or witnesses unfair consequences at school will be more likely to misbehave and assume police officers and judicial authorities also to be unfair. This finding is consistent with Sanches' research in Portugal which indicated students make inferences about the fairness of societal authorities based on their school experiences of justice (Sanches & Gouveia-Pereira, 2010; Sanches et al., 2012). Sanches and colleagues' work (2012) concluded by calling for research to link students' just world beliefs to this model.

The current study initially proposed that General BJW would have a mediating effect on evaluations of legal authorities through perception of school climate. However, comparing the mediated model, the partially mediated model, and the direct model in this sample, General BJW does influence perceptions of legal authorities, but perceptions of school climate does not mediate this relationship. Instead, both General BJW and school climate together account for 27% of the variance of legal authorities. Of all the paths in the models assessed in chapter four, the hypothesized link between General BJW and perceptions of legal authorities is unique to the current research study. Previous studies have called for the linkage between just world belief research and research on legal authorities (Dalbert, 2004; Sanches et al., 2012), but empirical findings on this connection had yet to be established. Prior research had found a significant correlation between General BJW and institutional trust (i.e. trade unions, social security system,

United Nations) among undergraduate students in Portugal (Correia & Vala, 2004). These authors suggested that General BJW is more closely related to perceptions of distant systems and authorities. How fairly adolescents perceive the world to be will shape how fairly they expect specific legal authorities to be.

The influence of General BJW and school climate on perceptions of legal authorities helps generalize Sanches and colleagues' work to a Latin American population and it provides the needed link between BJW research to legal authorities. In addition, it provides an important insight into the development of perceptions of legal authorities in Brazil, a country with unfavorable views towards legal authorities due to high perceptions of national corruption (Transparency International, 2013). Overall, students in this study reported mild General BJW endorsement ($M=3.31$, $SD=.82$) and a medium evaluation of legal authorities ($M=3.12$, $SD=.83$). This mediocre evaluation could be related to the sociocultural context of the Brazilian population and the specific historical time of the data collection. Data was collected at a city that hosted the World Cup approximately four months after the end of the tournament. Just a few months prior to the data collection, millions of Brazilians in cities across the country protested the high costs and corruption associated with the tournament (Antonelli, 2014, February 18; André, 2014, May 16; CBS News, 2014, June 14). This widespread dissatisfaction with societal authorities likely contributed to adolescents developing opinions about justice within their societies. There is no way to conclude that perceptions of justice declined due to the events surrounding the World Cup. However, the news of the protests can be understood as a symptom of a deeper social malaise that shapes the cultural assumptions of justice and fairness. Students are developing their perceptions of justice within a complex sociocultural environment and their views are shaped by their BJW and their experiences at school. These findings further the development of

just world theory and have powerful implications for school educators and administrators. See the implications section for further information on its applicability.

Research Question II Discussion

RQ-II: What is the pattern of development of both General BJW and Personal BJW across adolescence and between schools?

The results of a two-way MANOVA of Personal and General BJW revealed a significant interaction between schools and grade levels, but it did not account for much variance, $F(10)=4.15, p<.01, \eta^2=.043$. Upon careful analysis of this question, a few aspects of this sample were salient from the rest: (1) the consistency of General BJW across grade levels and schools, (2) the interaction of Personal BJW across grade level and schools, (3) and the different trajectories of just world beliefs for each school.

Based on prior research, a clear downward trend was expected in both Personal and General BJW with a more accentuated decline expected in General BJW (Adorić, 2004; Barreiro, 2013; Dalbert, 2001; Dalbert & Dzuka, 2004; Dalbert & Sallay, 2004; Furnham & Rajamanickam, 1992; Maes & Schmitt, 2004; Oppenheimer, 2004; Oppenheimer, 2006; Peter & Dalbert, 2010; Schönplflug & Bilz, 2004). The current study found a small negative correlation between General BJW and grade level, $r(473)=-0.129, p<.01$, but no relationship between Personal BJW and grade level, $r(473)=.029, p>.05$. The correlation between General BJW and grade level indicates that students tend to think the world is less fair as they age. However, the effect was small, and the similarities across schools and grade levels were more notable than the differences. This consistency indicates there may be an underlying worldview of justice that is shared among Brazilian adolescents of various ages and contexts. Although the majority of published research highlights the differences among various groups' General BJW, there has

been research in Croatia noting that a disadvantaged group and a control group held similar General BJW, although their Personal BJWs were significantly different (Adorić, & Kvartuc, 2007). The current analysis may indicate that, regardless of grade level or higher education, people of similar environments may share a similar framework about how fair the world is in general.

Past research has shown adolescence to be a time of differentiation between Personal and General BJW (Dalbert & Sallay, 2004). Personal BJW tends to be higher than General BJW at all ages, but the gap between them increases with age (Adorić, 2004; Oppenheimer, 2006). The current study recognized this effect in the military and the private school, but not in the public school. Personal and General BJW in the public school overlapped across age groups. Although the public school's trajectory is inconsistent with much of the literature on the development of BJW, it is similar to Dalbert's study (2001, p. 60) which compared students from different academic tracks in Germany. Those in higher academic tracks had a greater gap between Personal and General BJW, with Personal BJW consistently scoring higher than General BJW. In contrast, those in lower tracks had similar Personal and General BJW values. Dalbert hypothesized that the distinction between the Personal and General BJW observed in the higher tracks was because of greater cognitive development due to better education. The study concluded that stronger cognitive skills help adolescents engage in the complex thinking processes required to differentiate between Personal and General BJW. Although differences in cognitive development may account for some of the effects, I posit that the difference between students' General and Personal BJW is because students in a less advantaged educational context have a systematically less fair environment. It may not be that students from lower educational backgrounds cannot make the cognitive distinction between their world and the world in general,

but instead because their reality is not one of privilege. Students who have access to a better education and more resources and opportunities (such as the students in the military and the private school) acknowledge that the world is, in fact, fairer for them than for the majority of people.

The school and grade level interaction was particularly visible between 9th and 10th grade students in the public and private schools. It is important to note that 10th grade is the beginning of high school within the Brazilian school system. This transition coincides with a significant decrease in public school students' General BJW, Cohen's $d=.71$, and Personal BJW, Cohen's $d=1.43$. The military school students maintained consistent results, and the private school students in the 10th grade had higher Personal BJW values compared to those in 9th grade, Cohen's $d=.60$. Overall, private school students had significantly higher Personal BJW scores across the grade levels than public school students, Cohen's $d=.36$. Students from more privileged backgrounds acknowledged that the world is more just for them personally than for most others, and this realization may be occurring simultaneously with the transition into high school, with public school students believing their world is less fair once they reach high school compared to their views in middle school.

The distinction between General and Personal BJW in the military and the private school reflects their socioeconomic contexts and the quality of education they receive. According to conversations with the public school leadership, most students from the public school do not expect to attend college; higher education is perceived to be outside their realm of possibilities (F. Nazar, personal communication, November 24, 2014). This is not the case in the private school or the military school, which are both considered preparatory environments for college. The difference between the schools' college expectations was evident during the data collection

process. No data were collected for 12th graders in the private school because students were preparing for the college entrance exam, and the school administration did not want to interfere with their study schedule. In contrast, school attendance was very low in the public school for the 12th grade class because it was the end of the year, and many students had already stopped attending due to low morale (F. Nazar, personal communication, November 24, 2014). Due to the history of teacher strikes within the schools, the public school students are also at a disadvantage from the private and military school students. As mentioned in chapter two, many public schools within the city went on strike earlier in the school year (2014) causing disruptions in students' education and bringing to light the difficult education conditions of the public schools. Although the military school is a publicly funded institution, it was one of few schools that did not go on strike (Globo, 2015, April 3).

Prior research has indicated that Personal BJW is higher than General BJW (Correia & Dalbert, 2007; Dalbert, 1999; Fox, et al. 2010; Kamble & Dalbert, 2011; Sallay, 2004). However, this could be a reflection of the middle-class contexts typically assessed in research. Since past research has encompassed mainly middle-class participants, the inclusion of a more disadvantaged school provides a broader picture of BJW development. Sutton and Winnard (2007) conducted one of the few studies with at-risk young adults on this topic and found no significant differences between Personal and General BJW. Perhaps the distinction between Personal and General BJW is a privilege of those with access to greater resources. If so, this would explain why the difference between constructs was more notable in the military and private school compared to the public school.

Adolescents across schools and grade levels shared a similar understanding of how fair the world is in general, but they differed in how that justice is administered in their lives. If their

perception reflects reality, this study revealed that, as adolescents mature, the differences between their lives increasingly diverge in regards to the justice to which they have access. The intent of this study was not to determine if students' perception reflects reality in their daily lives, but to draw attention to their perceptions, because these perceptions will shape the way they interact with and shape the realities in their lives and communities.

Research Question III Discussion

RQ-III: Are there differences between students' perceptions of justice based on their ethnicity, school type, and family income?

BJW Between Advantaged and Disadvantaged Groups

Students' perceptions of justice significantly differed across different income levels and schools, but not between those in the majority ethnic group compared to minorities. Differences between ethnic groups were anticipated, but not significant, $p > .05$. Effect sizes revealed that minorities tended to have a lower Personal BJW ($d = .26$), school climate ($d = .32$), and perception of legal authorities ($d = .21$), compared to self-identified White students. However, General BJW values were very similar ($d = .02$). The results were in the direction anticipated, but much smaller and statistically insignificant, $p > .05$. Stanley Bailey's (2009) research on race in Brazil has shown that majority and minority groups have similar perspectives regarding the role of prejudice in society. Although there are many social disparities between majority and minority group members, compared to American samples, Brazilians seem to share a more homogenous perspective on justice across ethnicities (Bailey, 2009). This similarity helps explain why different groups had similar perceptions of justice. Also, Brazilian educational and financial disadvantages are more pronounced compared to racial differences (Bailey, 2009), which is consistent with the results of this study showing significant main effects for school and family

income. In the current study, it was also difficult to detect nuanced differences between ethnic groups with such a large percentage identifying with the majority group. Future studies should seek to understand differences in justice perceptions in more racially diverse regions of Brazil and with broader representations of ethnic minorities.

Differences between family income levels and school type reveal a pattern between students from privileged and less advantaged backgrounds. Students in the public schools and in the lowest family income level are more socially disadvantaged due to low social capital and poor school funding. Those in more disadvantaged groups showed lower Personal BJW compared to those more privileged groups, but higher General BJW. This difference may be because BJW is primarily a coping mechanism (Dalbert, 2004; Dalbert, 2009; Furnham, 2005; Lerner, 1980). Students in privileged contexts have a high Personal BJW and are less dependent upon the general fairness of the world (General BJW); therefore, they rate it lower. However, students in more vulnerable contexts may see the status quo as less escapable due to their disadvantaged status and be more prone to report higher General BJW.

Higher General BJW among lower-status groups is consistent with some research where African Americans and low SES participants had a higher BJW about the world in general compared to Whites and affluent participants (Hunt, 2000; Umberson, 1993). In a separate study, university students revealed that European Americans had higher Personal BJW compared to General BJW, but members of minority groups had no reasonable difference between Personal and General BJW (Calhoun & Cann, 1994). Although the current study revealed no significant difference in ethnicity, those from more advantaged groups tended to have higher Personal than General BJW, while those in less privileged groups had similar Personal and General BJW values.

System justification theory (SJT) helps shed light on these findings by positing that humans are motivated to justify the existing social order (Jost & Banaji, 1994; Jost, Banaji & Nosek, 2004). Those in disadvantaged groups have a greater motivation to justify the system because of the dissonance between self/group motivations and system motivations. This justification occurs at the non-conscious level and helps people rationalize the status quo and attribute meaning to their status. Jost and Banaji (1994) explain that SJT is compatible with just world theory in that both help people justify the existing realities. However, they argue that BJW is not a natural, universal motivation (as posited by Lerner, 1980), but is most relevant in exploitive systems where people are motivated to justify existing inequality. Since the publication of SJT, research on BJW has further emphasized the importance of separating the Personal and the General BJW. This distinction separates the personal coping resource (Personal BJW), from a system-justifying ideology (General BJW) embedded in just world theory.

People are particularly prone to engage in system justifying thoughts in situations of system dependency and inescapability (Kay & Friesen, 2011). This helps explain why Brazilian adolescents in the lowest family income bracket and those in the public schools tended to have higher General BJW than those in the more privileged demographics. Underprivileged participants had more similar Personal and General BJW to diminish the dissonance between their status and the world at large. This balance helps justify the system in which they live and attribute meaning to their surroundings. In contrast, students in more advantaged groups have access to greater resources and are more protected from system injustice. This privilege enables them to develop a strong Personal BJW and acknowledge a lower General BJW.

Perceptions of Legal Authorities

The most influential variable differentiating between income levels and schools was students' perceptions of legal authorities. The higher the income level, the more fairly students rated legal authorities, $r(413)=.23, p<.01$. This difference could be because public authorities tend to be present in situations of greater vulnerability and instability. Those less educated tend to be perceived as cooperating less with the law and have fewer resources to speak up in court (Peachey & Lerner, 1981). Laws and public authorities may unintentionally perpetuate and institutionalize societal biases and inequalities, and contribute to the perception of unfair treatment to socially disadvantaged groups.

Although small and not statistically significant, minorities reported lower perceptions of legal authorities ($M=2.99, SD=.77$) compared to those who self-identified as White ($M=3.17, SD=.84$) with a small effect size ($d=.21$). Research on police bias or racial profiling in Brazil is relatively scarce due to lack of official records (Cano, 2010). However, data compiled from Brazilian law enforcement reports suggest the likelihood of civilians being killed by police is much higher for Blacks than it is for Whites, even after taking into account the neighborhood economic status (Cano, 2010). In American samples, members of non-White ethnic groups are significantly more likely to perceive profiling compared to their White counterparts and are more likely to delegitimize legal authorities (Tyler & Wakslak, 2004). Future research should seek out less homogenous ethnic samples to further inquire about adolescents developing perceptions of legal authorities.

The largest difference between demographic groups in RQ-3 was between the military school and the other schools' perceptions of legal authorities. Perhaps not surprisingly, students in the military school had significantly higher perceptions of legal authorities compared to the

students in the private ($d=.84$) and public schools ($d=1.11$). The military school is under the authority of the Brazilian military and the Education Department, and many students have familial ties to law enforcement officials. Students' proximity to and interactions with legal authorities on a regular basis gives them a broader base from which to draw their opinion. In contrast, adolescents from other schools likely have little interaction with legal authorities which can lead them to rely on public stereotypes. Students from the private and public schools who have interactions with legal authorities, likely interact with them in negative and emotional situations (i.e. car accident, lawsuit, legal fees, courts, etc). The high exposure that students from the military school have to legal authorities in more neutral situations likely accounts for their more positive perceptions. In addition, students in the military school are much more dependent upon the fairness of legal authorities and, therefore more likely to justify the system and legitimize their authority (Kay & Friesen, 2011). Students in other schools are less immediately dependent upon the fairness of legal authorities, and therefore less motivated to justify the legitimacy of legal authorities.

However, although students in the military school had significantly higher perceptions of legal authorities compared to the other schools, the averages were still relatively low ($M=3.54$ on a six-point Likert-scale). Students in the private school ($M=2.92$, $SD=.67$) and in the public school ($M=2.70$, $SD=.72$) had even lower evaluations of legal authorities. These low averages are concerning and should be addressed both within the school and at a broader societal level. Results from RQ-1 revealed that students' perceptions of school climate significantly predicted that of legal authorities, $\beta=.426$, $p<.01$, indicating the school has some level of influence to improve perceptions of legal authorities. Positive opinions of legal authorities are not only important for attributing legitimacy to authorities, but also establishes a greater connection to

group membership. When authorities are perceived to be fair, people are more likely to buy-in to group rules because they perceive themselves as active participants in a common group (Emler & Reicher, 2005). In contrast, when adolescents grow up perceiving legal authorities to be biased and unfair, they are more likely to violate rules. However, these findings do not suggest that educators should simply teach adolescents to believe that all legal authorities are fair. Leaders should first strive for authority justice and build a reality where adolescents have a minimal vulnerability to authority bias.

Implications

For most individuals, school is the first societal institution they have repeated exposure to that involves complex systematic rules and non-familial authorities. The assumptions students create within the school about the fairness of authorities and rule enforcement influence adolescent expectations for societal authorities, such as the legislative, the judicial, and the law enforcement systems. The relationship between school climate and evaluations of legal authorities gives greater weight to the importance of establishing an explicitly fair school climate. Perceiving the school climate as fair influences not only students' adherence to rules within the school, but also to their evaluations of the legitimacy of legal authorities in the broader society. School educators and administrators must understand this ripple effect to conceptualize that their responsibility has implications on how students are constructing the justice of the outside world.

During data collection, a few students explicitly appreciated the importance of this study. This may indicate that school fairness is a topic that should be more openly addressed within the context of rule enforcement. Kohlberg and Hersh (1977) highlighted that the school is inevitably a stage for adolescents to practice their moral reasoning abilities. The way authorities frame and

enforce rules acts as a ‘hidden curriculum’ and shapes students’ perceptions of justice (Kohlberg & Hersh, 1977). Aquino (1998) wrote about the importance of establishing an explicit pedagogical contract where students know what is expected and understand the importance of authorities also being held accountable to the fairness of the contract. School authorities can establish relational capital with students by explicitly valuing their opinions and opening a dialogue about the consistency and validity of the school’s pedagogical contract.

Poor student conduct is one of the most prevalent concerns among Brazilian secondary education teachers (Aquino, 1998; Machado & Constantino, 2013). This study indicates that school fairness mediates the relationship between Personal BJW and student conduct. This finding highlights the power of the school context on adolescents’ behavior. Although there are several unjust factors outside of the school’s control, the school can be a powerful agent of change by mediating the effects of outside injustices. Educators and administrators should not see students as “problem students”, as if their behavior is innate or isolated from context. Instead, the school should maximize their influence and focus on explicitly creating conducive school climates that promote fairness within school boundaries.

School climate research has long advocated for an ecological approach to understand student behavior and student-authority relations (Trickett & Todd, 1972; Trickett & Schmid, 1993; Wong, Young & Fraser, 1997). Trickett and Todd (1993) contrast the ecological perspective with the more traditional personological view. In the personological view, student behavior is seen as an individual characteristic. In contrast, the ecological perspective acknowledges student conduct is a product of a dynamic interactive system (Trickett & Todd, 1972). The school plays a central role in setting the tone for all student-authority relationships as well as peer group interactions. School officials should be mindful of students’ perspectives on

fairness within the school. Rules and consequences must be clear from the beginning of the school year and maintained with consistency. Poorly articulated rules or sporadic enforcement can lead students to question the leadership legitimacy. An explicitly fair school climate can serve to both guide student expectations and protect them from unfair treatment..

Past research has shown that students with a high Personal BJW are more likely to be confident that they can achieve personal long-term goals (Hafer, Bègue, Choma & Dempsey, 2005; Sutton & Winnard, 2007) and academic success (Correia & Dalbert, 2007; Dalbert & Stöeber, 2006). Lerner (1974) hypothesized about the connection between BJW and goal attainment because of just world theory's conceptual connection with personal efficacy and locus of control. If students believe their personal lives are fair, they will be more motivated to achieve because they believe their efforts will be justly rewarded. In the current study, students from the private and the military schools reported a slight increase in Personal BJW across grade levels. BJW can empower students to work hard and develop healthy adaptive behaviors in the face of challenges. However, students in disadvantaged educational and social contexts reported lower perceptions of justice in their personal lives, possibly putting them at a disadvantage to the beneficial by-products of BJW such as personal efficacy and locus of control. Researchers and practitioners should seek to develop interventions to boost Personal BJW, particularly among socially disadvantaged youth.

Limitations

This study included only one school of each type (military, public, private), within only one Brazilian city. The sample is ethnically representative of the city, but not the country. Brazil is a large, diverse country with deep regional differences. Scholars outside of Brazil should be cautious not to generalize these findings to the whole country, and researchers within

Brazil should seek to reproduce these findings and highlight socio-cultural nuances. This study did not have sufficient ethnic diversity to differentiate between ethnic groups. To maintain sufficient groups of analysis, ethnicity was dichotomized into majority/minority categories. However, it cannot be presumed that there are no ethnic differences concerning perceptions of justice. Future research should further investigate the differences between various ethnic groups and make sense of them in light of racial and historical contexts in Brazil.

This study is cross-sectional in nature and developmental trends are only inferred. The findings of this study are subject to cohort effects and more nuanced trajectories between each time point. It is important to keep this limitation in perspective when interpreting the findings.

Finally, more work must be done to adequately measure the construct of legal authorities within the Brazilian context. Although there was adequate internal reliability, some items loaded on different latent constructs and future studies should distinguish between the different kinds of legal authorities to strengthen construct validity.

Future Research

As mentioned above, future research should seek to build a stronger measurement of legal authorities within the Brazilian context. The findings on the connection between school climate and legal authorities are of utmost importance as societies seek to understand the breakdown between citizens and legal authorities, particularly in disadvantaged populations. As a result, future initiatives should promote more interdisciplinary research with criminology to gain a holistic picture of adolescent development.

Prior research has shown a significant decrease across adolescence in the area of General BJW (Adorić, 2004; Oppenheimer, 2006). Although this decrease was mild in the Brazilian sample, the finding that General BJW predicts perceptions of legal authorities, brings new

gravity to the understanding of the downward developmental trend. When General BJW decreases, it speaks to their trust in legal authorities and can serve as a sign of dissonant relations between citizens and societal authorities. Future research should seek to further understand this relationship in order to get a more nuanced understanding of the development of perceptions of legal authority. It is important to remember that this study is cross-sectional in nature and does not assess students' development over time. The developmental trends inferred from past research have also largely been cross-sectional. Increased investment must be directed toward longitudinal designs to understand the development of just world beliefs.

Few studies have empirically assessed adolescents' BJW across multiple socioeconomic sectors. This study provides one snapshot of how perceptions of justice differ among adolescents of different social statuses. Further research among adolescents from different socioeconomic and cultural backgrounds should be conducted to see if the developmental trends found here could be replicated in different samples.

Finally, future studies should compare these findings with research in other cultures to gain a cross-cultural understanding of adolescents' just world beliefs and understand if the relationships found in this study are seen in other cultures and locations. The current study did not show the clear downward trend of BJW as expected from the literature in Europe. In the public school setting, there was considerable fluctuation between grades in students' Personal BJW. This indicates there may be other factors influencing students' responses, and that this construct may be malleable and subject to fluctuation across adolescence. Cross-cultural longitudinal studies are important to determine if the BJW developmental trajectory is different in Brazil compared to other cultural settings.

Conclusion

This research study analyzed 475 Brazilian adolescents across public, private, and military schools in a city of Southern Brazil. Structural equation modeling enabled the understanding that students' Personal BJW influences their perceptions of the school environment, which in turn influence their compliance with school rules. Personal BJW had a mediating effect on conduct through school climate. Additionally, adolescents' General BJW and school climate predicted their perceptions of legal authorities. For example, an adolescent who repeatedly feels unfairly treated or witnesses unfair consequences at school is more likely to misbehave in school and assume that police, judges, and legal authorities will also be unfair. School administrators and educators should understand the scope of their influence on adolescents' perceptions of justice that consequently influence adolescent behavior and extend beyond the school walls.

The cross-sectional analysis of grade level between schools indicated that all students shared a common view of the fairness of the world in general, but the development of their Personal BJW was dependent upon school context. Those in more prestigious school contexts tended to think the world was fairer as they got older compared to those in the public school who considered their lives increasingly less fair. Prior research had indicated that there is a downward trend in just world beliefs, but this study indicates that this trajectory is not universal, but influenced by the school context. Future longitudinal and cross-cultural research should seek to understand context-specific developmental trajectories.

Information on family income, school type, and minority status contributed to the understanding that adolescents' social status influences their perceptions of fairness. Adolescents from higher income levels, more prestigious schools, and in the majority ethnic

group, tended to have higher conceptualizations of justice in their personal lives, at school, and of legal authorities. These relationships indicated that there are important relationships between social privilege and perceptions of fairness.

This research captured a snapshot of Brazilian adolescents' justice beliefs and their relationship with educational and societal constructs. Adolescents are the working and voting force of the near future and are at a sensitive developmental level to solidify their assumptions about fairness and justice in their world. Further exploration in this area may empower secondary education to lead the discussion of justice and fairness as adolescents grapple with these complex themes in their current contexts and into adulthood.

References

- Adorić, V. C. (2004). Belief in a just world and young adults' ways of coping with unemployment and the job search. In C. Dalbert & H. Sallay (Eds), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp.189-214). London, UK: Routledge.
- Adorić, V. C. & Kvartuc, T. (2007). Effects of mobbing on justice beliefs and adjustment. *European Psychologist*, 12(4), 261-271. doi: 10.1027/1016-9040.12.4.261
- Adorić, V. C. (2011). Justice related beliefs and coping efficacy: A test of the adaptive functioning of the Belief in a Just World. In D. Miljković, M. Rijavec (Eds.) , *The 3rd International Conference on Advanced and Systematic Research, 1st Scientific Research Symposium: Positive psychology in education, book of selected papers* (pp. 25-44). Zagreb Croatia: Faculty of Teacher Education.
- André, J. (2014, May 16). Citizens protest against the World Cup in Curitiba (Manifestantes protestam contra a Copa do Mundo em Curitiba). *Parana Online*. Retrieved from <http://www.parana-online.com.br/editoria/cidades/news/799782/?noticia=MANIFESTANTES+PROTESTA+M+CONTRA+A+COPA+DO+MUNDO+EM+CURITIBA>
- Antonelli, D. (2014, February 18). Protests in Curitiba over the Cup (Curitiba tem protestos contra a Copa). *Gazeta do Povo*. Retrieved from <http://www.gazetadopovo.com.br/vida-e-cidadania/curitiba-tem-protestos-contra-a-copa-etnk5671scdn29zji9c16omry>
- Aquino, J. G. (1998). A indisciplina e a escola atual. *Revista da Faculdade de Educação*, 24(2), 181-204. Retrieved from http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-25551998000200011

- Aquino, J. G. (2011). On the (counter-) normative spectrum of everyday school life: An analysis of the disciplinary events of a public school.
- Bailey, S. R. (2009). Legacies of race: Identities, attitudes, and politics in Brazil. Stanford, CA: Stanford University Press.
- Barreiro, A. (2013). The appropriation process of the belief in a just world. *Integrative Psychological and Behavioral Science*, 47(4), 431-449.
- Bear, G.G., Gaskins, C., Blank, J., & Chen, F.F. (2011). Delaware School Climate Survey-Student: Its factor structure, concurrent validity, and reliability. *Journal of School Psychology*, 49, 157-174.
- Bear, G. G., Yang, C., Pell, M. & Gaskins, C. (2014). Validation of a brief measure of teachers' perceptions of school climate: Relations to student achievement and suspensions. *Learning Environments Research*, doi:10.1007/s10984-014-9162-1
- Bègue, L. & Muller, D. (2006). Belief in a just world as moderator of hostile attributional bias. *The British Psychological Society*, 45, 117-126.
- Braband, J. & Lerner, M. (1974). 'A little time and effort:' Who deserves what from whom? *Personality and Social Psychology Bulletin*, 1(1), 177-179.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513-531
- Caldeira, S. N. (2001). Contributions of psychology to the study of indiscipline in the classroom. *Estudos de psicologia*, 18(1), 76-96.
- Calhoun, L. G., & Cann, A. (1994). Differences in Assumptions About a Just World: Ethnicity and Point of View. *Journal Of Social Psychology*, 134(6), 765-770.

- Cano, I. (2010). Racial bias in police use of lethal force in Brazil. *Police Practice and Research*, 11(1), 31-43.
- Casarin, F. S., Wong, C. E., Pimenta Parent, M. M., de Salles, J. F., & Fonseca, R. P. (2012). Comparison of neuropsychological performance between students from public and private Brazilian schools. *The Spanish Journal of Psychology*, 15(3), 942-951.
- Castro, M. (1998). A study of power relations in the primary public school in light of Weber and Bourdieu: from formal, impersonal, and symbolic power to explicit power (Um estudo das relações de poder na escola pública de ensino fundamental à luz de Weber e Bourdieu: do poder formal, impessoal e simbólico ao poder explícito). *Revista da Faculdade de Educação*, 24(1), 9-22. Retrieved from http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-25551998000100002
- CBS News (2014, June 2014). Protests cast shadow over games in Brazil. Retrieved from <http://www.cbsnews.com/news/world-cup-2014-protests-cast-shadow-over-games-in-brazil/>
- Cohn, E. S., Bucolo, D., Rebellon, C. J., & Gundy, K. V. (2010). An integrated model of legal and moral reasoning and rule-violating behavior: The role of legal attitudes. *Law of Human Behavior*, 34, 295-309. doi: 10.1007/s10979-009-9185-9
- Cohn, E. S., Trinkner, R. J., Rebellon, C. J., Van Gundy, K. T., & Cole, L. M. (2012). Legal attitudes and legitimacy: Extending the integrated legal socialization model. *Victims and Offenders*, 7, 385-406.
- Colégio Militar de Curitiba (n.d.) O Colégio. Retrieved from <http://www.cmc.ensino.eb.br/index.php/home/o-colegio>

- Correia, I., & Vala, J. (2004). Belief in a just world, subjective well-being and trust of young adults. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp. 85–100). London: Routledge
- Correia, I. & Dalbert, C. (2007). Belief in a just world, justice concerns, and well-being in Portuguese schools. *European Journal of Psychology of Education*, 23(4), 421-437.
- Correia, I., Kamble, S.V., & Dalbert, C. (2009). Belief in a just world and well-being of bullies, victims and defenders: a study with Portuguese and Indian students. *Anxiety, Stress, & Coping*, 22(5) 497-508.
- Dalbert, C. (1999). The world is more just for me than generally: About the personal belief in a just world scale's validity. *Social Justice Research*, 12(2), 79-98.
doi:10.1023/A:1022091609047
- Dalbert, C. (2001). *The justice motive as a personal resource: Dealing with challenges and critical life events*. New York, NY: Kluwer Academic/Plenum Publishers.
- Dalbert, C. (2002). Beliefs in a just world as a buffer against anger. *Social Justice Research*, 15(2), 123-145.
- Dalbert, C., & Maes, J. (2002). Belief in a just world as personal resource in school. In M. Ross, & D. T. Miller (Eds), *The justice motive in everyday life* (pp. 365-381). Cambridge UK:Cambridge University Press.
- Dalbert, C. (2004). The implications and functions of just and unjust experiences in school. In C. Dalbert & H. Sallay (Eds), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp. 117-134). London: Routledge.

- Dalbert, C., & Dzuka, J. (2004). Belief in a just world, personality, and well-being of adolescents. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescents and young adulthood: Origins and consequences* (pp. 101-116). London: Routledge.
- Dalbert, C., & Radant, M. (2004). Parenting and young adolescents' belief in a just world. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp. 11-25). London, UK: Routledge.
- Dalbert, C., & Sallay, H. (Eds.). (2004). *The justice motive in adolescence and young adulthood: Origins and consequences*. New York, NY: Routledge.
- Dalbert, C., & Stöeber, J. (2005). The belief in a just world and distress at school. *Social Psychology Of Education*, 8(2), 123-135. doi:10.1007/s11218-005-1835-2
- Dalbert, C. & Stöeber, J. (2006). The personal belief in a just world and domain-specific beliefs about justice at school and in the family: A longitudinal study with adolescents. *International Journal of Behavioral Development*, 30(3), 200-207.
- Dalbert, C. (2007), Editorial. *International Journal of Psychology*, 42(1)
doi: 10.1080/00207590601111090
- Dalbert, C. (2009). Belief in a just world. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of Individual Differences in Social Behavior* (pp. 288-297). New York, NY: Guilford Publications.
- Dalbert, C., Montada, L., & Schmitt, M. (2012). GBJW © Martin-Luther-University Halle-Wittenberg 16.01.2012.
- Dalbert, C., Montada, L., & Schmitt, M. (2014). PBJW © Martin-Luther-University Halle-Wittenberg 14.04.2014.

- Damon, W. (1981). The development of justice and self-interest during childhood. In M. Lerner (Ed.), *The justice motive in social behavior* (pp.57-72). New York, NY: Plenum Press.
- Dette, D. E., Stöeber, J., & Dalbert, C. (2004). Belief in a just world and adolescents' vocational and social goals. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp. 231-247). London, UK: Routledge.
- Donat, M., Umlauf, S., Dalbert, C., & Kamble, S. V. (2012). Belief in a just world, teacher injustice, and bullying behavior. *Aggressive Behavior*, 38, 185-193.
- Dzuka, J. & Dalbert, C. (2002). Mental health and personality of Slovak unemployed adolescents: The impact of belief in a just world. *Journal of Applied Social Psychology*, 32(4), 732-757. doi: 10.1111/j.1559-1816.2002.tb00240.x
- Dzuka, J. & Dalbert, C. (2007). Aggression at school: Belief in a personal just world and well-being of victims and aggressors. *Studia Psychologica*, 49(4), 313-320.
- Emler, N. & Reicher, S. (1987). Orientations to institutional authority in adolescence. *Journal of Moral Education*, 16, 108-116.
- Emler, N. & Reicher, S. (2005). Delinquency: Cause or consequence of social exclusion. In D. Abrams, M. Hogge, & J. Marques (Eds), *Social Psychology of Inclusion and Exclusion* (pp. 211-241). New York, NY: Taylor & Francis.
- Estevez, E., Rachitskly, M., & Rodriguez, C. (2013). Is perception of the mainstream legal system homogeneous across ethnic groups? *European Journal of Psychology Applied to Legal Context*, 5(2), 35-39. doi: 10.5093/ejpalc2013a5
- Fagan, J., & Tyler, T. R. (2005). Legal socialization of children and adolescents. *Social Justice Research*, 1(3), 217-242. doi: 10.1007/s11211-00506823-3.

- Finch, W. H.(2010). Imputation methods for missing categorical questionnaire data: A comparison of Approaches. *Journal of Data Science*, 8, 361-378.
- Finch, W. H. & French, B. (2013). A Monte Carlo comparison of robust MANOVA test statistics. *Journal of Modern Applied Statistical Methods*, 12(2), 35-81.
- Finch, W. H. (2015). *Data imputation algorithms for mixed variable types in large scale educational assessment: A comparison of Random Forest, Multivariate Imputation using Chained Equations (MICE), and MICE with recursive partitioning*. Manuscript submitted for publication.
- Freyre, G. (1933). *The Masters and the Slaves: A Study in the Development of Brazilian Civilization*. Berkeley, CA: University of California Press.
- Fox, C. L., Elder, T., Gater, J. & Johnson, E. (2010). The association between adolescents' beliefs in a just world and their attitudes to victims of bullying. *British Journal of Educational Psychology*, 80, 183-198.
- Furnham, A. (1985). Just world beliefs in an unjust society: A cross cultural comparison. *European Journal of Social Psychology*, 15, 363-366.
- Furnham, A. & Rajamanickam, R. (1992). The protestant work ethic and just world beliefs in Great Britain and India. *International Journal of Psychology*, 27(6), 401-416.
- Furnham, A. (1993). Just world beliefs in twelve societies. *The Journal of Social Psychology*, 133(3), 317-329.
- Furnham, A. (2005). The justice motive in adolescence and young people: Origins and consequences. *Social Justice Research*, 18(2), 203-210. doi:10.1007/s11211-005-7369-0

- Furlong, M. J., Greif, J. L., Bates, M. P., Whipple, A. D., Jimenez, T. C., & Morrison, R. (2005). Development of the California school climate and safety survey – short form. *Psychology in the Schools*, 42(2), 137-149. DOI: 10.1002/pits.20053
- Gamboa, L. F., & Waltenberg, F. D. (2012). Inequality of opportunity for educational achievement in Latin America: Evidence from PISA 2006-2009. *Economics of Education Review*, 31, 694-708.
- Gendron, B. P., Williams, K. R., & Guerra, N. G. (2011). An analysis of bullying among students within schools: Estimating the effects of individual normative beliefs, self-esteem, and school climate. *Journal of School Violence*, 10(2), 150-164.
doi:10.1080/15388220.2010.539166
- Globo (2014, March 17). Strike paralyzes activities in 70% of the schools in Curitiba, says City Hall (Greve paralisa atividades em 70% das escolas em Curitiba, diz prefeitura). Retrieved from <http://g1.globo.com/pr/parana/noticia/2014/03/greve-paralisa-atividades-em-70-das-escolas-em-curitiba-diz-prefeitura.html>
- Globo (2015, April 3). Government says that 20 schools are in session, regardless of the teacher strikes (Governo diz que 30 escolas têm aula, apesar da greve dos professores). *Parana RPC*. Retrieved from <http://g1.globo.com/pr/parana/noticia/2015/03/governo-diz-que-30-escolas-tem-aula-apesar-da-greve-dos-professores.html>
- Gonzalez, M. T. (2008). Race, gender and ethnicity in contemporary Brazil. *Latin American Research Review*, 43(1), 219-224.
- Gouveia-Pereira, M., Vala, J., Rubini, M. & Palmonari, A. (2003). School experience, relational justice, and legitimation of institutions. *European Journal of Psychology of Education* 18(3), 309-325.

- Hafer, C. L. (2000). Investment in long-term goals and commitment to just means drive the need to belief in a just world. *Personality and Social Psychology Bulletin*, 26, 1059-1073.
- Hafer, C. L. & Bègue, L. (2005). Experimental research on just-world theory: Problems, developments, and future challenges. *Psychological Bulletin*. 131(1). 128-167.
- Hofstede, G., de Hilal, G., Malvezzi, S., Tanure, B., & Vinken H. (2010). Comparing regional cultures within a country: Lessons from Brazil. *Journal of Cross-Cultural Psychology*, 41(3), 336-352. doi: 10.1177/0022022109359696
- Honorato da Silva, L. & Sampaio, Y. (2010). Notas sobre pobreza e educacao no Brasil. *Revista Problemas del Desarrollo*, 163(41), 75-97.
- Hunt, M. O. (2000). Status, Religion, and the "Belief in a Just World": Comparing African Americans, Latinos, and Whites. *Social Science Quarterly (University Of Texas Press)*, 81(1), 325-343.
- IBGE (2008). History of the color and race investigation in the national IBGE surveys. (Histórico da investigação sobre cor ou raca nas pesquisas domiciliares do IBGE). Retrieved from http://www.ibge.gov.br/home/estatistica/populacao/caracteristicas_raciais/notas_tecnicas.pdf
- IBGE (2009). Color or race indicators according to the Monthly Occupational Research (Indicadores de cor ou raca, segunda a Pesquisa Mensal de Emprego). Retrieved from http://www.ibge.gov.br/home/estatistica/indicadores/trabalhoerendimento/pme_nova/marco2009.pdf
- IBGE (2010). Synthesis of Social Indicators: Analysis of life conditions (Síntese de indicadores sociais: Uma análise das condições de vida da população Brasileira). Retrieved from

http://www.ibge.gov.br/home/estatistica/populacao/condicaodevida/indicadoresminimos/sinteseindicsociais2010/SIS_2010.pdf

IBGE (2012). An analysis of the living conditions of the Brazilian population 2012. Retrieved from

http://www.ibge.gov.br/english/estatistica/populacao/condicaodevida/indicadoresminimos/sinteseindicsociais2012/default_tab_pdf.shtm

Jost, J. T. & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, 33, 1-27.

Jost, J. T., Banaji, M. R. & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology*, 25(6), 881-919.

Kamble, S. V. & Dalbert, C. (2011). Belief in a just world and wellbeing in Indian schools. *International Journal of Psychology*, 47(4), 1-10. doi:10.1080/00207594.2011.626047

Karniol, R., & Miller, D.T. (1981). Morality and the development of conceptions of justice. In M. J. Lerner and S. Lerner (Eds.), *The Justice Motive in Social Behavior* (pp. 73-89). New York: Plenum Press

Kay, A. C. & Friesen, J. (2011). On social stability and social change: Understanding when system justification does and does not occur. *Current Directions in Psychological Science*, 20(6), 360-364. DOI: 10.1177/0963721411422059

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.

Kohlberg, L. & Hersh, R. H. (1977). Moral development: A review of the theory. *Theory into Practice*, 16(2), 53-59.

- Kristjánsson, K. (2004). Children and the belief in a just world. *Studies In Philosophy & Education*, 23(1), 41-60.
- Laupa, M., & Turiel, E. (1986). Children's conceptions of adult and peer authority. *Child Development*, 57, 405-412.
- Leão, G, Dayrell, J. T., dos Reis, J. B. (2011). Fresh looks on high school (Jovens olhares sobre a escola do ensino medio). *Caderno Cedes, Campinas*, 31(84), 253-273.
- Lerner, M. J., & Simmons, C. H. (1966). Observer's reaction to the innocent victim: Compassion or rejection? *Journal of Personality and Social Psychology*, 4(2), 203-210.
- Lerner, M. J. (1974). The justice motive: "Equity" and "parity" among children. *Journal of Personality and Social Psychology*, 29(4), 539-550.
- Lerner, M. J. (1977). The justice motive: Some hypotheses as to its origins and forms. *Journal of Personality*, 45, 1-52. doi: 10.1111/j.1467-6494.1977.tb00591.x
- Lerner, M. J. (1980). *The belief in a just world: A fundamental delusion*. New York: Plenum.
- Lerner, M. J., & Lerner, S. (1981). *The justice motive in social behavior*. New York: Plenum.
- Lind, E., & Tyler, T. (1988). *The social psychology of procedural justice*. New York, NY: Plenum Press.
- Lopes, C. S. (2008). Violence in the schools of Maringá (Violência nas escolas de Maringá). *Acta Scientiarum. Human and Social Sciences*, 30 (1), 35-44.
- Machado, L. B. & Constantino, E. P. (2013). Teachers' social representations concerning their work. *Revista Eletrônica de Psicologia Política*, 11(30), 74-90.
- Maes, J., & Kals, E. (2004). Two facets of the belief in a just world and achievement behaviour at school. In C. Dalbert & H. Sallay (Eds), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp. 135-152). London: Routledge.

- Maes, J. & Schmitt, M. (2004). Transformation of the justice motive? Belief in a just world and its correlates in different age groups. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescence and young adulthood. Origins and consequences* (p. 64-82). London: Routledge.
- Malahy, L.W., Rubinlicht, M.A. & Kaiser, C.R. (2009). Justifying inequality: A cross-temporal investigation of U.S. income disparities and just-world beliefs from 1973 to 2006. *Social Justice Research*, 22(4), 369-383.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50, 370-396.
- Marcus, A. P. (2013). Sex, color, and geography: Racialized relations in Brazil and its predicaments. *Annals of the Association of American Geographers*, 103(5), 1282-1299. doi: [10.1080/00045608.2012.700605](https://doi.org/10.1080/00045608.2012.700605)
- Mardia, K. V. 2004. Mardia's Test of Multinormality. Encyclopedia of Statistical Sciences. .
- McParland, J. L. & Eccleston, C. (2013). "It's not fair": Social justice appraisals in the context of chronic pain. *Current Directions in Psychological Science*, 22(6), 484-489. doi: 10.1177/0963721413496811
- Nucci, L., & Turiel, E. (2009). Capturing the complexity of moral development and education. *Mind, Brain, and Education*, 3, 151-159.
- Oliveira, P. R., Belluzzo, W., & Pazello, E. T. (2013). The public-private test score gap in Brazil. *Economics of Education Review*, 35, 120-133.
- Organisation for Economic Cooperation and Development. (2010). *Position paper: Tackling Inequalities in Brazil, China, India and South Africa*. Retrieved from <http://www.oecd.org/els/emp/46459969.pdf>

- Oppenheimer, L. (2004). Justice and the belief in a just world: A developmental perspective. *Personality and Individual Differences*, 38(8), 1793-1803.
- Oppenheimer, L. (2006). The belief in a just world and subjective perceptions of society: A developmental perspective. *Journal of Adolescence*, 29(4), 655-669. doi: 10.1016/j.adolescence.2005.08.014
- Peachey, D. E., & Lerner, M. J. (1981). Law as a social trap: Problems and possibilities for the future. In M. J., Lerner & S. C. Lerner (Eds), *The justice motive in social behavior: Adapting to times of scarcity and change* (pp. 493-61). New York, NY: Plenum Press.
- Peffley, M. & Hurwitz, J. (2010). Justice in America: The separate realities of blacks and whites. New York, NY: Cambridge University Press.
- Peter, F. & Dalbert, C. (2010). Do teachers treat me justly? Implications of students' justice experience for class climate experience. *Contemporary Educational Psychology*, 35, 297-305.
- Peter, F., Dalbert, C., Kloeckner, N., & Radant, M. (2012). Personal belief in a just world, experience of teacher justice, and school distress in different class contexts. *European Journal of Psychology of Education*, 28(4), 1221-1235. DOI 10.1007/s10212-012-0163-0
- Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.
- Piaget, J. (1997). *The moral judgment of the child*. Glencoe, IL: Free press. (Original work published 1932).
- Pimentel, C. E., Gouveia, V. V., Diniz, P. K., Saenz, D. P., Santos, A. V., & Vieira, I. S. (2010). Evidence of construct validity and reliability of the General Just World Scale. Evidências de validade de construto e precisão da Escala Geral do Mundo Justo. *Boletim de Psicologia*, 60, 133.

- Piquero, A. R., Fagan, J., Mulvey, E. P., Steinberg, L., & Odgers, C. (2005). Criminology: Developmental trajectories of legal socialization among serious adolescent offenders. *Journal of Criminal Law & Criminology*, 96(1), 267-298.
- Program for International Student Assessment (2012). Country Note: Brazil. Retrieved from <http://www.oecd.org/pisa/keyfindings/PISA-2012-results-brazil.pdf>
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
- Rubini, M., & Palmonari, A. (1995). Guidelines to the formal authority and political participation of adolescents. Orientamenti verso le autorità formali e partecipazione politica degli adolescenti. *Giornale Italiano di Psicologia*, 5, 757-775.
- Ruiz, M. F. (2013). Lutas populares e democratização da escola pública no estado do paran . *Revista Brasileira de Educa  o*, 18(56), 1-15.
- Sallay, H. (2004). Entering the job market: Belief in a just world, fairness and well-being of graduating students. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp.189-214). London, UK: Routledge.
- Sanches, C., & Gouveia-Pereira, M. (2010). Julgamentos de justi a em contexto escolar e comportamentos desviantes na adolesc ncia. *An lise Psicol gica*, 28(1), 71-84.
- Sanches, C., Gouveia-Pereira, M., & Carugati, F. (2012). Justice judgements, school failure, and adolescent deviant behaviour. *British Journal of Educational Psychology*, 82, 606-621.
- Sch npflug, U., & Bilz, L. (2004). Transmission of the belief in a just world in the family. In C. Dalbert & H. Sallay (Eds.), *The justice motive in adolescence and young adulthood: Origins and consequences* (pp. 153-171). London, UK: Routledge.

- Simmons, C. (1981). Theoretical issues in the development of social justice. In M. J. Lerner & S. C. Lerner (Eds.), *The justice motive in social behavior* (pp.41-55). New York, NY: Plenum Press.
- Sutton, R. M., & Winnard, E. J. (2007). Looking ahead through lenses of justice: The relevance of just-world beliefs to intentions and confidence in the future. *British Journal of Social Psychology*, 46(3), 649-666. doi: 10.1348/01466606x166220
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. Boston, MA: Pearson.
- Telles, E. E. (2004). *Race in another America: The significance of skin color in Brazil*. Princeton, N.J: Princeton University Press.
- Transparency International (2013). National results: Brazil. Retrieved from <http://www.transparency.org/gcb2013/country/?country=brazil>
- Trickett, E. J. & Todd, D. M (1972). The high school culture: An ecological perspective. *Theory into Practice*, 11(1), 28-37.
- Trickett, E. J. & Schmid, K. D. (1993). The school as a social context. In P. H. Tolan & B. J. Cohler (Eds), *Handbook of Clinical Research and Practice with Adolescents* (pp. 173-202). Oxford, England: John Wiley & Sons.
- Tu, Y. T, Lin, S. Y., & Chang, Y. Y. (2011). A cross-cultural comparison by individualism/collectivism among Brazil, Russia, India, and China. *International Business Research*, 4(2), 175-182. doi: 10.5539/ibr.v4n2p175
- Tyler, T. R. (1990). *Why people obey the law*. New Haven, CT: Yale.
- Tyler, T. R. (1997). The psychology of legitimacy: A relational perspective on voluntary deference to authorities. *Personality and Social Psychology Review*, 1(4), 323-345.

- Tyler, T. R. & Wakslak, C. J. (2004). Profiling and police legitimacy: Procedural justice, attributions of motive, and acceptance of police authority. *Criminology*, 42(2), 253-281.
- Umberson, D. (1993). Sociodemographic position, Worldviews, and Psychological Distress. *Social Science Quarterly* 74. 575-89.
- Vicente, I. (2010). Belief in a just world, coping, and well-being of bullying victims (Crença no mundo justo, coping e Bem-estar em vítimas de Bullying) (Masters thesis). Retrieved from Repositorio ISCTE at <http://hdl.handle.net/10071/2889>
- Vygotsky, L. S., Reiber, R. W., & Carlton, A. S. (1987). The collected works of L. S. Vygotsky: Problems, of general psychology, New York, NY: Plenum Press.
- Way, S. M. (2011). School discipline and disruptive classroom behavior: The moderating effects of student perceptions. *Sociological Quarterly*, 52(3), 346-375. doi: 10.1111/j.1533-8525.2011.01210.x
- Wong, A. F., Young, D. J., & Fraser, B. J. (1997). A multilevel analysis of learning environments and student attitudes. *Educational Psychology*, 17(4), 449-468.
- World Bank (2007). World DataBank. Retrieved from <http://databank.worldbank.org/data/home.aspx>
- World Bank (2013). Fair and efficient growth; the biggest challenge for Latin America. Retrieved from <http://www.worldbank.org/en/news/feature/2013/03/15/crecimiento-america-latina>
- Yang, C., Bear, G. G., Chen, F. F., Zhang, W., Blank, J. C., & Huang, X. (2013). Students' perceptions of school climate in the US and China. *School Psychology Quarterly*, 28(1), 7-24.

Appendix A

Sex: () Masculine () Feminine Year: () 8th grade () 9th () 10 th () 11 th () 3 ^o Ens Med Age: _____ School: _____ Color/Race: () Branca () Preta () Parda () Indigena () Amarela Family Income: () 1 to 3 minimum wages () 4 to 6 () 7 or more Have you ever repeated a year? () Yes () No <i>Select only one number (1-6) for each question</i>		Strongly disagree	Disagree	Partially disagree	Partially agree	Agree	Strongly agree
1	I believe that, by and large, I deserve what happens to me	1	2	3	4	5	6
2	I am usually treated fairly	1	2	3	4	5	6
3	I believe that I usually get what I deserve	1	2	3	4	5	6
4	Overall, events in my life are just	1	2	3	4	5	6
5	In my life injustice is the exception rather than the rule.	1	2	3	4	5	6
6	I believe that most of the things that happen in my life are fair	1	2	3	4	5	6
7	I think the important decisions that are made concerning me are usually just	1	2	3	4	5	6
8	I believe that, by and large, people get what they deserve	1	2	3	4	5	6
9	I think basically the world is a just place	1	2	3	4	5	6
10	I am confident that justice always prevails over injustice	1	2	3	4	5	6
11	I am convinced that in the long run people will be compensated for injustices	1	2	3	4	5	6
12	I firmly believe that injustices in all areas of life are the exception rather than the rule.	1	2	3	4	5	6
13	I think people try to be fair when making important decisions.	1	2	3	4	5	6
14	The rules in this school are fair	1	2	3	4	5	6
15	The consequences of breaking school rules are fair	1	2	3	4	5	6
16	Teachers treat students of all races and social classes with respect	1	2	3	4	5	6
17	Adults in this school care about students of all races and social classes	1	2	3	4	5	6
18	Adults in this school treat students fairly	1	2	3	4	5	6
19	When students break rules, they are treated fairly	1	2	3	4	5	6
20	It pays to follow the rules at my school	1	2	3	4	5	6
21	Judges are more protective of the better-off	1	2	3	4	5	6
22	In general the decisions of the courts/judges are fair	1	2	3	4	5	6
23	Laws safeguard the rights of all citizens	1	2	3	4	5	6
24	The police treats all people in the same manner regardless of race, sex, nationality, etc)	1	2	3	4	5	6
25	Most policemen are honest	1	2	3	4	5	6
26	Sometimes the police arrest people unjustly	1	2	3	4	5	6
27	The police spend more time protecting the rich than helping normal people	1	2	3	4	5	6

1=Never; 2=Rarely; 3= Sometimes; 4= Often; 5=Frequently; 6= Always							
28	I respect my teachers	1	2	3	4	5	6
29	I respect this school's administration	1	2	3	4	5	6
30	I follow the rules of this school	1	2	3	4	5	6
31	I control my behavior in the classroom	1	2	3	4	5	6
32	I am quiet and listen to the teacher in the classroom	1	2	3	4	5	6
33	I stay seated during class	1	2	3	4	5	6
34	I talk during class lectures	1	2	3	4	5	6